



# POWER INVERTER MODIFIED SINE WAVE, 300W, 12V DC TO 230V~50HZ MODEL NO: PI300.V5

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions and maintained properly, give you years of trouble free performance.

**IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.**



Refer to  
instruction  
manual



Electrical  
shock hazard



Keep in dry  
area protect  
from rain

## 1. SAFETY

- ✓ Save this instruction manual for safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagrams. Keep your invoice. Keep the instruction manual and invoice in a safe and dry place for future reference.
- ▲ **DANGER!** - Beware, lead-acid batteries generate explosive gases during normal battery operation.
- ✓ Wash immediately with soap and water if battery acid contacts skin or clothing. If acid enters eye, flush immediately with cool clean running water for at least 15 minutes and seek immediate medical attention.
- ✗ **DO NOT** smoke or allow a spark or flame in the vicinity of the battery or engine.
- ✓ If the battery terminals are corroded or dirty, clean them before attaching the clips.
- **WARNING!** To prevent the risk of sparking, short circuit and possible explosion **DO NOT** drop metal tools in the battery area, or allow them to touch the battery terminals.
- ✓ Before attaching to battery, remove personal metallic items such as rings, bracelets, necklaces and watches. A lead acid battery can produce a short-circuit current which is high enough to weld such items to the vehicle and cause severe burns.
- ✓ Keep children and unauthorised persons away from the working area.
- **WARNING! DO NOT** use on any vehicles other than those with 12v systems.
- **WARNING!** For delicate items such as laptops, an anti-surge device is recommended.
- ✗ **DO NOT** connect to any AC power source.
- ✗ **DO NOT** dismantle. The inverter must be checked by qualified service personnel only.
- ✗ **DO NOT** get inverter wet or use in damp or wet locations or areas where there is condensation.
- ✗ **DO NOT** use the inverter for any purpose other than for which it is designed.
- ✗ **DO NOT** pull the cables or clips from the battery terminals.
- ✗ **DO NOT** operate the inverter if damaged.
- ✗ **DO NOT** connect to a positive earthed system. Ensure you have the polarity correct before connecting, red clip to positive (+) battery terminal and black clip to negative (-) battery terminal.
- ✓ Before connecting ensure nothing is plugged into the inverter, and the inverter is switched OFF.
- **WARNING! Inverters become hot during use.**
- ✓ When not in use store inverter in a safe, dry, childproof location.

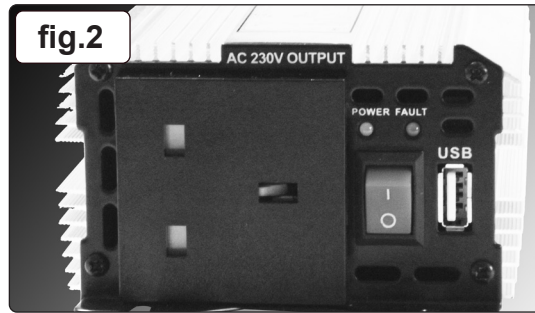
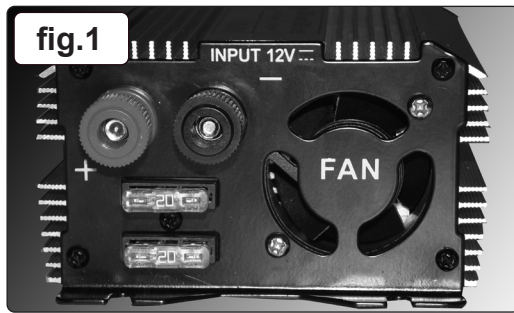
## 2. INTRODUCTION

Supplies continuous smooth 230V power from 12V DC power supply found in cars, caravans, boats and commercial vehicles. Suitable for powering small TVs, laptops, power tools and various other electrical equipment rated under 300W (maximum under load). Features USB port (5V=2.1A) for use on various domestic electronic equipment such as digital cameras and mobile phones. Aluminium case provides durability and maximum heat dissipation. Safety features include automatic overload shutdown, Short circuit protection, low voltage alarm, low voltage shutdown and overheat shutdown. Supplied with vehicle accessory socket plug and battery clips.

## 3. SPECIFICATION

Model No:	PI300.V5
Continuous Output:	300W
Dimension (W x D x H):	180 x 95 x 58mm
Input Voltage:	12V DC
Nett Weight:	0.96kg
Output Frequency:	50Hz
Output Voltage:	230V AC
USB Output:	5V=2.1A

## 4. OPERATION



### 4.1. POWER SOURCE REQUIREMENTS

- 4.1.1. The inverter must be connected to a 12V= negative earth system. **DO NOT** use with a positive earth system.
- 4.1.2. The power source must be capable of providing between 10.0V and 15.5V and able to supply the necessary current to operate the load.

### 4.2. CONNECTING BATTERY CLIPS OR VEHICLE ACCESSORY PLUG TO INVERTER (fig.1)

- 4.2.1. To attach the Battery Leads remove the terminal screws on the rear of the inverter.
- 4.2.2. Attach the black battery lead ring connector to the Negative (-) terminal screw on the inverter, and tighten.
- 4.2.3. Attach the red battery lead ring connector to the Positive (+) terminal screw on the inverter, and tighten.
- 4.2.4. Attach the red battery lead ring connector to the Positive (+) terminal screw on the inverter, and tighten.
- 4.2.5. Check that the battery leads are secure.

### 4.3. CONNECTING VEHICLE ACCESSORY SOCKET POWER SOURCE

- 4.3.1. To connect the vehicle accessory plug, attach the ring connectors to the terminal screws as in section 4.2.
- 4.3.2. Plug the accessory plug into the vehicle accessory socket.

**Note:** Some vehicles will require the ignition to be switched to the accessory position to supply power to the accessory socket.

**Note:** Vehicle accessory sockets are generally fitted with a 15A to 20A fuse. To avoid overload and blowing the fuse, if the device to be connected exceeds 200W then use the battery clips instead of the vehicle accessory plug.

### 4.4. CONNECTING TO BATTERY TERMINALS

**Note:** Check the battery is 12V=. **DO NOT** use with a 6V or 24V battery.

- 4.4.1. Ensure battery terminals are clean, if necessary clean away any corrosion.
- 4.4.2. Check to make sure the inverter is turned OFF and no flammable fumes are present.
- 4.4.3. Clip the red (+) battery clip to the red (+) terminal post on the battery.
- 4.4.4. Clip the black (-) battery clip to the black (-) terminal post on the battery.
- 4.4.5. Check all connections are secure.

### 4.5. CONNECTION TO LOAD

**Note:** Most electrical appliances, tools etc, have a rating plate indicating the power consumption in amps or watts. Use these ratings to ensure you remain within the inverter's maximum capacity. If the rating is shown in Amps, multiply the value by the voltage (230V) to determine the wattage.

- 4.5.1. Ensure that the inverter is switched OFF. Plug the equipment you wish to use into the inverter 3 pin socket or into the USB port as required (fig.2).
- 4.5.2. Make sure the load does not exceed the wattage rating of the inverter.
- 4.5.3. Switch the inverter on, check that everything is working and the green LED is lit.

- ❑ **WARNING! DO NOT** connect the inverter to any AC distribution wiring or any AC load circuit in which the neutral conductor is connected to ground (earth).

**Note:** Some rechargeable devices do not operate well with a moderated sine wave inverter. They only operate from a standard household outlet which provides a pure sine wave. It is recommended that these devices be operated from a standard household outlet only. This problem does not occur with most battery operated equipment. Most of these devices use a separate charger or transformer that is plugged into a separate AC socket.

### 4.6. PLACEMENT OF INVERTER

- 4.6.1. For best and safest operation the inverter should be placed on a flat and stable surface, electrically insulated from the vehicle. If required, fix to an insulated surface by means of the four screws provided.
- 4.6.2. Use only in a dry location, **DO NOT** allow inverter to get wet.
- 4.6.3. Use in cool ambient temperature of between 5°C and 35°C. **DO NOT** place on or near a heating vent.
- 4.6.4. Allow sufficient space around the inverter for cooling. If the inverter overheats it will shut down and will not restart until it has cooled down.
  - \* **DO NOT** use near flammable materials or anywhere that flammable gasses could accumulate.
- 4.6.5. The inverter may become uncomfortably hot during extended periods of full power use.

- ❑ **WARNING! DO NOT** place on or near materials that may be affected by heat.

### 4.7. WATTAGE LOADING

- 4.7.1. Inductive loads, such as TV's and stereos, require more current to operate than do resistive loads of the same wattage rating. Induction motors, as well as some televisions, may require 2 to 6 times their wattage rating to start up. The most demanding in this category are those that start under load, such as compressors and pumps. Testing is the only definitive way to determine whether a specific load can be started and how long it can run. The unit will simply shut down if it is overloaded. To restart the unit after a shutdown due to overloading, remove the overload.

**Note:** The inverter will not operate high wattage appliances or equipment that produce heat, such as hair dryers, microwave ovens and toasters.

### 4.8. BATTERY OPERATING TIME

- 4.8.1. With a typical vehicle battery, a minimum operating time of 1 to 2 hours can be expected depending on the load draw. It is recommended that the operator starts the engine every hour to recharge the battery. This will prevent any unexpected shutdown of the equipment and will ensure that there is always sufficient battery capacity to start the vehicle. The inverter may be used either with the engine running or turned off. However, the inverter must be switched OFF when starting the vehicle.

- 4.8.2. The inverter draws less than 1.3 Amperes from the battery when it is not supplying power to a load. In most cases, the inverter may be left connected to the battery when it is not in use. If the vehicle will not be used for several days, disconnect the unit from the battery.
- 4.9. THE INVERTER MONITORS THE FOLLOWING POTENTIALLY HAZARDOUS CONDITIONS**
- 4.9.1. LOW BATTERY VOLTAGE** - This condition is not harmful to the inverter but could damage the power source. An alarm will sound when input voltage drops to between 10.2 and 10.8V. The inverter automatically shuts down when input voltage drops to between 9.2 and 9.8V. When the condition is corrected, the unit may be restarted.
- 4.9.2. SHORT CIRCUIT** - Reverse polarity or short circuit of the load will usually result in the opening of the short circuit protection and blowing the fuse(s).
- 4.9.3. HIGH TEMPERATURE** - When the temperature of the internal heat sink reaches 65°C, the solid state temperature sensor will automatically shut down the unit. Once it is allowed to cool, the unit may be restarted.

## 5. MAINTENANCE

### 5.1. FUSES

- \* **DO NOT** replace fuses with those of a higher rating.

### 5.2. CLEANING

- 5.2.1. When required, clean with a damp cloth. **DO NOT** allow the the unit to become wet or use abrasive or solvent cleaners.

## 6. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Unit will not operate	<ol style="list-style-type: none"> <li>1. Poor DC contact.</li> <li>2. Battery voltage below 10V.</li> <li>3. Load draws too much power.</li> <li>4. Inverter in thermal shutdown.</li> <li>5. Vehicle battery in poor condition.</li> <li>6. Vehicle ignition switched off.</li> <li>7. Vehicle accessory socket circuit fuse blown.</li> <li>8. Inverter external fuse(s) blown due to short circuit.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check all DC contacts.</li> <li>2. Recharge or replace battery.</li> <li>3. Reduce load.</li> <li>4. Allow inverter to cool.</li> <li>5. Check / replace battery.</li> <li>6. Turn ignition key to accessory position.</li> <li>7. Check vehicle fuse and replace as necessary.</li> <li>8. Check battery connections and replace fuse(s).</li> </ol>
Low output voltage	Check with voltmeter.	Use true RMS voltmeter.
Low voltage alarm sounds	1. Bad connection or wiring.	1. Check and tighten all DC connections.
Television Interference	1. Inverter too close to the television.	1. Locate the inverter as far as possible from the TV, antenna and other cables.



### ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.



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### WEEE REGULATIONS

Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

**Note:** It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice. Please note that other versions of this product are available. If you require documentation for alternative versions, please email or call our technical team on [technical@sealey.co.uk](mailto:technical@sealey.co.uk) or 01284 757505.

**Important:** No Liability is accepted for incorrect use of this product.

**Warranty:** Guarantee is 12 months from purchase date, proof of which is required for any claim.

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