



# PURE SINE WAVE DIGITAL INVERTER USER MANUAL



KAI700WPD | KAI1200WPD | KAI2000WPD | KAI3000WPD

## 1. INTRODUCTION

Thank you for purchasing a KickAss Pure Sine Wave Digital Inverter. This unit converts 12V DC to 240V AC using intelligent electronics, so you can operate and run mains powered devices from a suitable sized 12V battery. As inverters output hazardous voltages, please ensure all instructions are read carefully before use.

## 2. IMPORTANT SAFETY INFORMATION



### **Warning**

Before installing and using this inverter, read and follow the safety information below.

### **2-1 General safety precautions**

2-1-1. Do not expose the inverter to rain, snow, spray, water, bilge or dust.

To reduce risk of hazard, do not cover or obstruct the ventilation openings.

Do not install the inverter in a zero-clearance compartment, this may result in overheating.

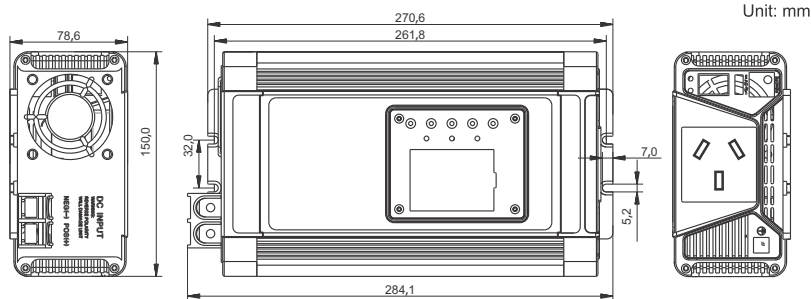
2-1-2. To avoid a risk of fire and electronic shock make sure that existing wiring is in good electrical condition; and that wire size is not undersized. Do not operate the inverter with damaged or substandard wiring.

2-1-3. This equipment contains components which can produce arcs or sparks. To prevent fire or explosion, do not install in compartments containing batteries or flammable materials or in locations that require ignition protected equipment, this includes any space containing gasoline-powered machinery, fuel tanks, or joints, fittings, or other connection between components of the fuel system.

### 3. FEATURES

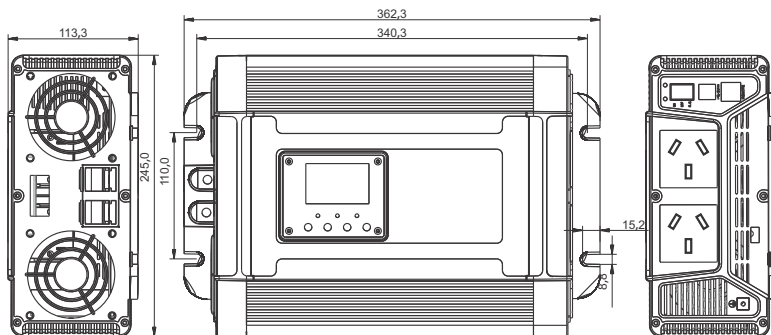
- Highly efficient pure sine wave AC output
- Digital controller with LCD Screen
- Remote digital controller with LCD Screen (Accessory)
- USB charging port 5V 2.1A
- User selectable voltage cut outs
- AC/DC isolated design
- Smart cooling design
- Capable of driving inductive and capacitive loads
- Protection features including, low voltage alarm, overload shutdown, short circuit, input overvoltage and over temperature

### 4. DIMENSIONS AND SPECIFICATIONS



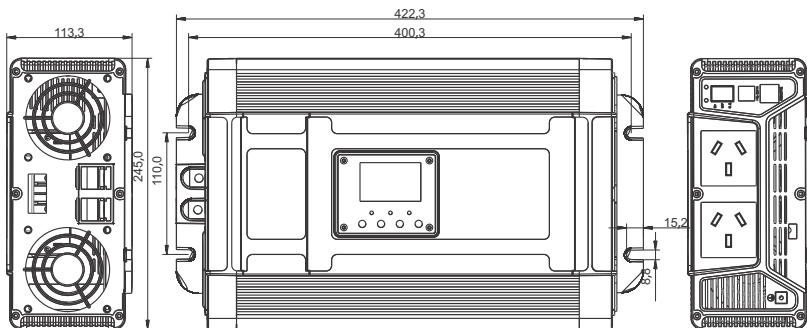
**700W Pure Sine Wave Inverter**  
**KAI700WPD**

SKU	KAI700WPD
DC Volt	12V
Input Voltage Range	10-15V DC
No-Load Current	$\leq 1A$
Convert Efficiency	$\geq 90\%$
DC Wiring	10mm <sup>2</sup>
Output Voltage	240V AC 50/60Hz $\pm 0.5$ Hz
Rated Power	700W
Peak Power	1400W
USB	5V 2.1A
Waveform	Pure Sine Wave
Remote Cord Length	5m



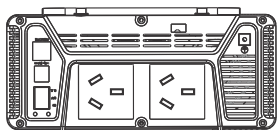
**1200W Pure Sine Wave Inverter**  
**KAI1200WPD**

SKU	KAI1200WPD
DC Volt	12V
Input Voltage Range	10-15V DC
No-Load Current	$\leq 1A$
Convert Efficiency	$\geq 90\%$
DC Wiring	16mm <sup>2</sup>
Output Voltage	240V AC 50/60Hz $\pm 0.5$ Hz
Rated Power	1200W
Peak Power	2400W
USB	5V 2.1A
Waveform	Pure Sine Wave
Remote Cord Length	5m

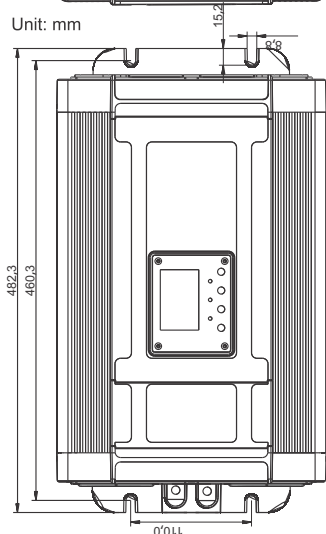


**2000W Pure Sine Wave Inverter**  
**KAI2000WPD**

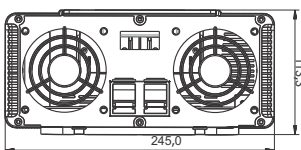
SKU	KAI2000WPD
DC Volt	12V
Input Voltage Range	10-15V DC
No-Load Current	$\leq 1A$
Convert Efficiency	$\geq 90\%$
DC Wiring	25mm <sup>2</sup>
Output Voltage	240V AC 50/60Hz $\pm 0.5$ Hz
Rated Power	2000W
Peak Power	4000W
USB	5V 2.1A
Waveform	Pure Sine Wave
Remote Cord Length	5m



Unit: mm



SKU	KAI3000WPD
DC Volt	12V
Input Voltage Range	10-15V DC
No-Load Current	$\leq 1A$
Convert Efficiency	$\geq 90\%$
DC Wiring	35mm <sup>2</sup>
Output Voltage	240V AC 50/60Hz $\pm 0.5$ Hz
Rated Power	3000W
Peak Power	6000W
USB	5V 2.1A
Waveform	Pure Sine Wave
Remote Cord Length	5m



**3000W Pure Sine Wave Inverter**  
**KAI3000WPD**

## 5. INSTALLATION

### 5.1 Mounting

The inverter has four slots in its mounting bracket that allow the unit to be fastened against a bulkhead, floor, wall or other flat surface. Ideally, the mounting surface should be cool to the touch.

To avoid voltage drop install inverter as close as possible to the 12V DC power source (Battery).

The inverter can be operated in any position, however, if it is to be mounted on a wall, mount it horizontally so that indicators, switches, outlets and terminal blocks located on the front panel are visible and accessible. If the inverter is to be installed in a moving vehicle, we strongly recommend that the inverter be shock-mounted either on the floor (in a clear, safe area) or on a secure flat surface.

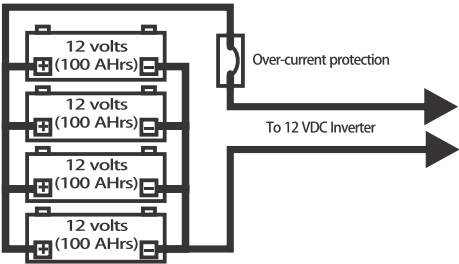
### 5.2 Wiring

Follow this procedure to connect the battery cables to the DC input terminals of the inverter. Your cables should be sufficiently size to avoid voltage drop. We strongly recommend using the included cables as they are sized to avoid voltage drop. If cables are not an adequate gauge or length this will decrease the inverters performance such as poor surge capabilities, low input voltage warnings and shutdowns. Failure to use correct wiring will prompt under voltage protection warning. Ensure the cables are connected to the inverter correctly on the positive/red cable. Once the main battery cables are connected to your inverter it is ready for operation.

Wiring the batteries in parallel increases the total run time the batteries can operate the AC loads.

A parallel connection combines overall battery capacity by the number of batteries in the string.

In the example shown, four 12 VDC/100AH batteries are combined into a single 12VDC/400AH battery bank.

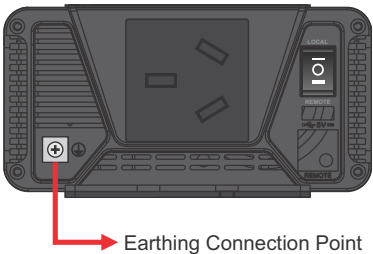


12 volt battery bank (total capacity = 400 Ahrs)  
Parallel Battery Wiring

**In-Built Earthing Point**

It is important to install a grounding wire from the unit's inbuilt earthing point to your chassis or a grounding pole.

A grounding wire gives an appliance or electrical device a safe way to discharge excess electricity. By taking the electricity that builds up during a malfunction or surge and sending it outside of your circuit, into the ground.

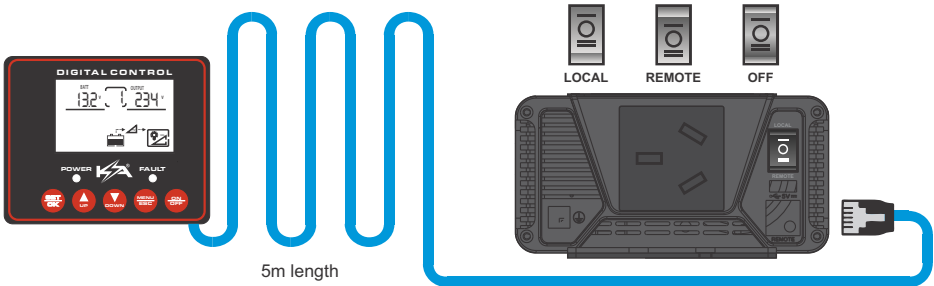


**⚠ Warning**

The installation of a fuse must be on the positive cable. Failure to place a fuse on “+” cables running between the inverter and battery may cause damage to the inverter. Never connect the main cables incorrectly to the battery. Connecting in reverse polarity will damage the inverter.

**5.3 Remote Display**

The remote digital LCD controller allows you to monitor and control the inverter from a convenient location. This allows the inverter to be installed closer to the batteries while it can be controlled from up to 5M away. To install the remote digital LCD controller simply plug in the supplied cable and run to the remote LCD socket on the inverter. Note when using the remote, the main inverter switch must be in the remote position and when using the interface on the inverter the switch needs to be in the local position.



## 6. OPERATION

### 6-1 Operation - General

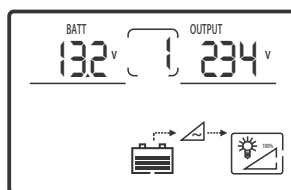
Once your inverter is installed and connected to batteries, switch the inverter on using the main power switch. Your inverter will now be ready to use, simply plug in an appliance and operate. The digital LCD control can be used as detailed below.

Warning: Do not intentionally use an appliance that is above the inverters maximum output rating. This will cause the inverter to shut down and in some cases may damage the inverter.

This inverter features a digital LCD display which can be used to view status information and control certain parameters as outlined below.

### 6-2 LCD Display and Controls:

1. SET/OK: Setting button, enter button
2. UP: Setting button (UP)
3. DOWN: Setting button (DOWN)
4. MENU/ESC: Menu button, exit button
5. ON/OFF: Power on/off switch



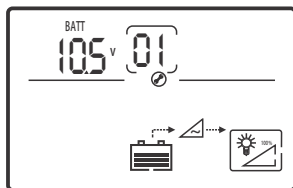
### 6-3 Display Overview:

No.	Icon	Function description
1		Battery output voltage
2		Warning and fault codes When the inverter is running normal, the icon will rotate clockwise. When the inverter detects a fault, the corresponding fault code will appear.
3		Indicates output voltage, current, power, frequency
4		Battery level
5		DC/AC inverter is in operating mode
6		Indicates the percentage of load level

### Display Notes:

- Press "ESC" to select the indication of the Icon 3 (Output voltage, current, power, frequency)  
Press "Up" to select or set auto switch the data of Icon 3.
- Press and hold "UP" and "DOWN" button 3 seconds at the same time until the display backlight flashes 3 times and the data parameters are restored to the factory default values;
- When no fault , the LCD screen backlight automatically turns off when the button is not operated for 30s. When there is a fault or the buttons are pressed, the LCD screen automatically lights up.

## 6-4 Setting Inverter Parameters:



1. Press "SET/OK" for 5s. You are now entering the settings interface. As shown above.
2. Press "UP and DOWN" to adjust parameters.
3. Press "SET/OK" to confirm adjustment.
4. To reset the parameters press "set" and the ICON 1 will flash.
5. Pressing "ESC" will cancel this step and redirect you too the setting interface.
6. Press and hold "ESC" for 5s to exit the settings interface.
7. If there is no activity for 10s the inverter display will go back to the main menu.

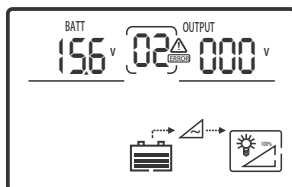
Setting interface	Code	Range
Undervoltage protection value	01	12V Default : 10.5 Setting : 10.0-11.0
Undervoltage recovery value	02	12V Default : 12.0 Setting : 11.5-12.5
Overvoltage protection value	03	12V Default : 15.3 Setting : 15.2-16.0
Overvoltage recovery value	04	12V Default : 14.7 Setting : 14.5-15.0
Overload short circuit mode	05	Default : 0 Setting 0: lock 1:restart
Overload setting value	06	Default : 110% Setting : 105-120%
Overload short circuit restart delay value	07	Default : 10 Setting: 5-60S
Alarming mode	08	Default : 0 Setting 0:Open 1:Close
Diagnostic setting	09	Manufacturer use only

### Notes :

Undervoltage warning value = undervoltage closing value + 0.5V, overvoltage warning value = overvoltage closing value - 0.5V.



## 7. TROUBLE SHOOTING



### Warning

Do not open or disassemble the inverter. Attempting to service the unit yourself may result in a risk of electrical shock or fire.

When faults occur: The icon  indicates the corresponding fault code and flashes for attention

Fault	Code	Solution
Battery low voltage	01	Stop using the inverter and charge the battery Check cable length & gauge size for excessive voltage drop
Battery over voltage	02	Check the battery voltage is below 15V; Check the charging voltage
Front-end circuit over temperature	03	Ensure the inverter has adequate ventilation and is being used at a suitable temperature (0-40°) Please note: extended periods of use can cause overheating
Back-end circuit over temperature	04	
Front and backend over temperature	05	
Output overload	08	Reduce loads being used so that it is below the rated power of the unit. Please note that inductive or capacitive loads may be several times higher than their rated power upon start up.
Output short circuit	09	Disconnect the loads and check if it is short circuit

## 8. MAINTENANCE

You should clean the exterior of the unit periodically to prevent accumulation of dust and dirt.  
At the same time, tighten the screws on the DC input terminals.

## **OUR GUARANTEE**

This KickAss® product comes with a 2 year warranty for your peace of mind. In the unlikely event this product fails when used according to our user guide, we will either repair or replace it.

## **KICKASS PRODUCT QUALITY**

In Australia, our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Warranty does not cover products that have not been used in accordance with the KickAss® user guide or are outside the warranty terms and conditions.

## **QUESTIONS AND COMMENTS**

Please visit us at [supportportal.kickassproducts.com.au](http://supportportal.kickassproducts.com.au)