UCGSOLAR

Powering the World

User Manual

UCG3KVA

Pure Sine Wave Inverter

Brief Introduction

UCG3KVA pure sine wave power inverter is made of high quality power frequency transformers, advanced CPU control technology, IGBT tubes or FUJI IGBT modules combined with DSP technology to generate sine wave power source. Inverters with IGBT and DSP technology are characterized of wide load range, fast response, anti-interference, low self consumption, high efficiency, etc., They are regarded as the best choice for areas without grid power or for solar/wind generator systems.

Application Area

Computer systems, communications systems, precision instruments, precision machine tools, railways, shipping, hospitals, shopping malls, schools, families, travel, alarm system, widely used for solar and wind power generation equipments. Also, when connected with a direct external maintenance-free battery bank, it can be used as an EPS (Emergency power system).

Attention:

1. When utilizing UCG3kva inverter, the switch time between grid power and battery power is less than 1s, - so it's not suitable for the loads which requires switch time to be less than 20ms. Per customer's request UCG3kva inverter can be customized to "0" switch time - Please mention the need for this feature when ordering.

2. UCG3KVA inverters can be used within industrial and commercial sectors, it can be applied to all kinds of loads (normally, the max. starting current of the loads should not exceed 2.5 times of the inverter rated current.)

Safety

Please take note of the following safety measures which also applies to inverter loads. Please read the details carefully and reserve it for future reference.

1. To avoid electric shock, without the guide of a technician do not open the cover of the inverter or pull the input and output terminals.
2. When functioning the inverter input/output cables should be arranged in proper order to avoid any cable damage.
3. Inverter power supply lines must be ground connected to avoid electric shock.
4. Don't connect the inverter ground lines to heating pipes, water pipelines, gas pipelines and other public facilities, - to avoid violating the rights of the third party.
5. Don't connect the ground line and neutral line. If connected together or reversely connected, it may cause abnormal working of the inverter or lead to electric shock.
6. When the battery voltage is higher than 48V, in order for safety installation and future easy maintenance, should connect in series with one high current DC switch between batteries and inverter.
7. For the inverter with AC input (grid charger), please connect in series with one power switch between grid and inverter to ensure safety.
8. In avoid fire caused by overload, please don't overload the inverter with appliances.

Technology Characters

Main Data (Single Phase)

Model	UCG
Specs	3KVA
Rated power	2KW
Input DC	48VDC
Output current	9.09A
Instantaneous current	10.8A(10 s)
Output frequency	50HZ
Output AC	220V
Output wave	Pure sine wave
Output frequency	50HZ
Voltage stability	±5%
AC input(grid)	220V
Overload protection	2.4KW(120% of the rated power), 10 seconds
Under voltage protection	42VDC(87.5% of battery rated voltage)
Efficiency	≥80% (full load)
Working Environment	Temperature:0-20~+540 Relative Humidity: 30~90%
Dimension	430*220*340mm
Weight	42Kg

Notice: The UCG3KVA is a off-grid inverter, please do not connect the AC output to the grid.

Cable Size Option

Power	DC Voltage	Wire of DC	AC voltage	Wire of AC
Single phase 3000VA	48V	16mm2	220V	1.5mm2

Moving

1. Don't move the inverter in reverse.
2. Handle the inverter slowly, avoid crash.
3. Before moving, turn off the inverter and remove all wires;

Installation place

1. Put the inverter on a flat ground or spot.
2. Put the inverter in a well ventilated place (at least 50cm surrounding space in one meter range of the inverter should not have combustible material or heat source).
3. Avoid sun, rain and damp.
4. Put far away from fire.
5. Do not place objects on the inverter.
6. Do not put the inverter in a place with corrosive gas.
7. Best working Temperature: 0~40.

Installation Method and Operations

Before wiring, please turn the general switch off ("9" in Diagram 2 - pg. 9).

Wires between the battery and Inverter.

1. According to the input DC voltage(48VDC) requirements of inverter, connect the positive (+, red wire) and negative (-, black wire) of the batteries to relative terminals (positive connector 7" in Diagram 2 and negative connector "8" in Diagram 2 - pg. 9) of the inverter through one DC switch. **Note:** Reverse connection is dangerous!

Power input wires (for the models with grid standby function)

1. Grid power cables 220V should be connected to the power inverter via circuit breakers according to the AC input socket ("13" in Diagram 2 - pg. 9). **Note:** The circuit breaker for inverters can not be used together with any other loads.

Power output wires

1. The power output wires should be connected to the AC output socket ("12" in Diagram 2 - pg. 9).
2. The output wires should avoid any short circuits.
3. The load should be limited to the rated power capacity of the inverter.

ON/OFF

Before turning on the inverter, please re-check all cables and terminals are properly connected, the loads connect should abide to the following rules:

1. Purely resistive loads, the maximum rated power of loads should not be over the inverter rated power (2KW).
2. Purely inductive loads, the maximum rated power of loads should not be over the inverter rated power of 40% (800W).
3. Resistive and inductive mixed loads, the maximum rated power should not be over the inverter rated power of 50% (1KW).

Installation Method and Operations

1. Turn on the general switch ("9" in Diagram 2 - pg. 9). The LCD will show "POWER OFF". After turning on the general switch the inverter starts initializing the system.
2. Push the start buttons on the front panel after 30s ("2" in Diagram 1 - pg. 8).
3. After 2s, the inverter starts outputting AC power, the LCD show "EMERGENCY POWER"
4. Press the screen page button on the right side of the LCD ("6" in Diagram 1 - pg. 8), the LCD will show "system OK"
5. Press the screen page button on the right side of the LCD ("6" in Diagram 1 - pg. 8) again, the LCD will show information of AC input, AC output, loads and battery. When one display cycle finishes, press the screen page button to start next cycle.
6. Turn on the loads.
7. To shut down the inverter, turn off the switches of the loads and then turn off the inverter general switch ("9" in Diagram 2 - pg. 9).

Notice:

When the inverter shuts off due to the protection features for under voltage, overloads or over-temperature - Turn off the general switch ("9" in Diagram 2 - pg. 9), ONLY turn it on after the problem is identified and resolved.

Structure and Function Description

Front Panel

Diagram 1 - UCG3KVA single phase 3KVA inverter

1. LED Display: Show for AC-DC voltage and load status;
2. Start Button: Used to start and shut down the machine
3. Charging Indicator: Valid when charging function is available;
4. Inverter Indicator: It is "ON" when Inverter is functioning;
5. Fault Indicator: It is "ON" when there is a fault also the inverter stops working;
6. Screen Page Button: To view the data and stop their calls.

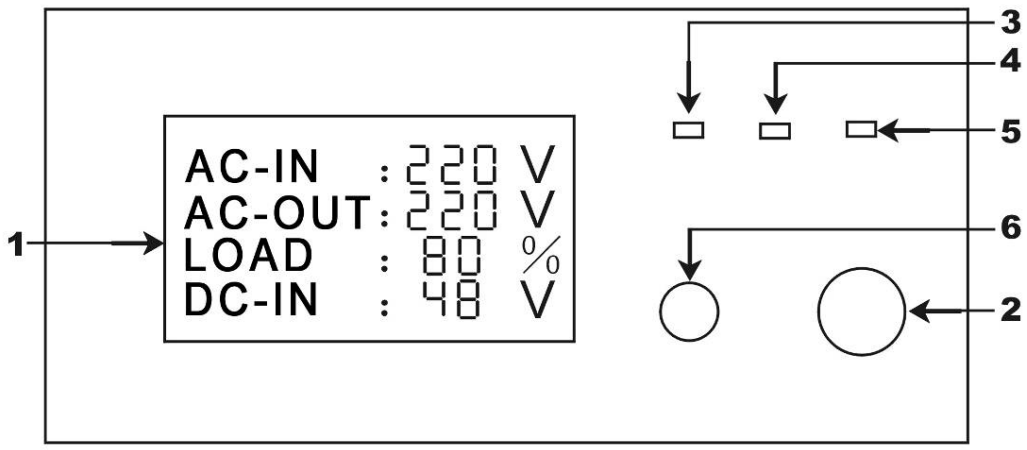


Diagram 1, Front panel

1. LED display
2. Start button
3. Charging Indicator
4. Inverter Indicator
5. Fault indrcator
6. Screen page button

Back side

Diagram 2 - UCG3KVA single phase 3KVA inverter

7. Positive connector of the battery
8. Negative connector of the battery
9. General switch
10. Positive connector of the solar panel
11. Negative connector of the solar panel
12. AC output socket
13. AC input (grid) socket
14. Vent for cooling fan

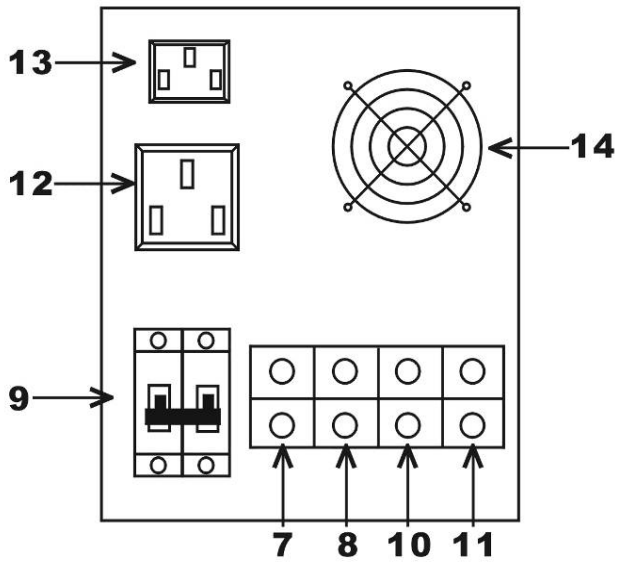
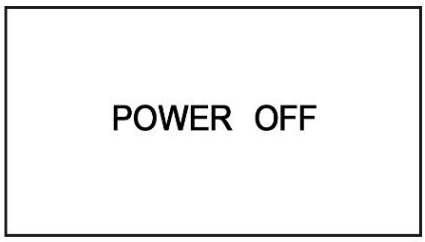


Diagram 2, Back side

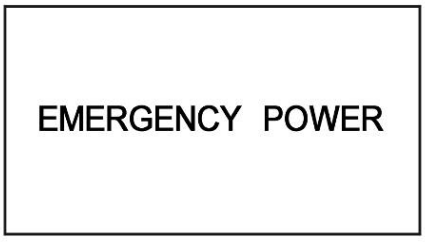
7. Positive connector of the battery
8. Negative connector of the battery
9. General switch
10. Positive connector of the solar panel
11. Negative connector of the solar panel
12. AC output socket
13. AC input (grid) socket
14. Vent of cooling fan

Structure and Function Description

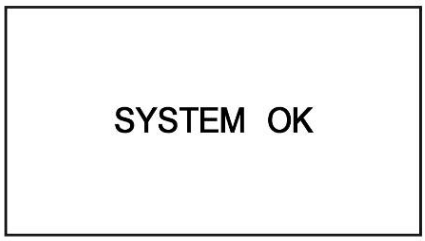
LCD Display



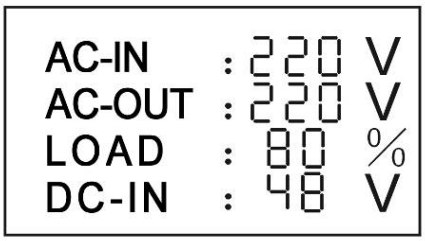
1. The display shows the status within 30s after turn on general switch, please press the start button after 30s



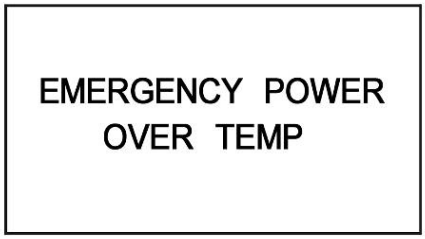
2. The display shows the status after press the start button, the inverter working normally and with a gap their calls



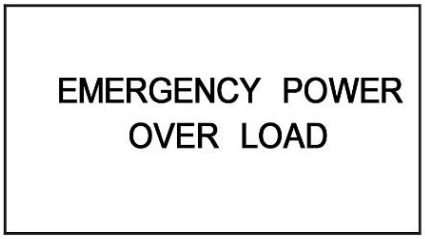
3. The display show the status after first press the screen page button and at the same time the their calls gone



4. The display shows the status when press the screen page button again



5. The inverter has no AC output and with their calls, means the temperature is over the highest working temperature and the over-temperature protection works



6. The inverter has no AC output and with their calls, means over loads or over current and the over loads/over current protection works

Need to Contact Us?

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