

8ZED Pure Sine Wave Inverter with Charger

Instruction Manual



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1. Safety Guidelines (Please read through this manual before assembling inverter charger)

- Risk of electrical shock and energy hazard.
- All installations should be examined by a qualified technician.
- Warranty will be void if case of the unit is removed or tampered with.
- Do not install unit in places with high moisture or near water.
- Do not install unit in places with high ambient temperature, under direct sunlight or near flame source.
- Only connect batteries with the same brand and model number in one battery bank.
Using batteries from different manufacturers or different capacity is strictly prohibited, and will void warranty!
- Never allow a spark or flame in the vicinity of the batteries because it may generate explosive gases during operation.
- Ensure air flow from the fan is not obstructed at both sides (front and back) of the unit. Please allow at least 15cm of space.
- Do not stack any objects on unit.



WARNING:

Batteries will deteriorate with age.

It is recommended to execute regular battery maintenance, at least once a year.

Deteriorated batteries should be changed by a qualified electrician, or the failed batteries may cause fire or other hazards.



Don't
disassemble



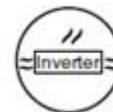
Keep away from
moisture



Keep away from
fire or high
temperature



Don't stack on
the inverter



Keep good
ventilation

2. Introduction

- This unit is a DC/AC Pure Sine Wave Inverter with charger, drawing power from the battery bank and converting it into AC voltage.
- It has built-in three-stage battery charger and automatic transfer between inverter power and incoming AC utility power.
- General applications include PC, IT Electronics, Vehicles, Yachts, Home Appliances, Motors, Power Tools, Industrial Control Equipment, AV Systems and more.

2.1 Features

- LED digital display showing input DC voltage and percentage of power
- LED indicators showing charger is charging and full status.

- Full protection including short-circuit, over-voltage, under-voltage, over-temperature, over-load
- Input and output isolated
- With battery charger
- Transferring time: 20ms to ensure the power supply uninterrupted
- Cooling mode: Thermal Fan
- Remote Control On/Off – 4 meter cable

Power inverter:

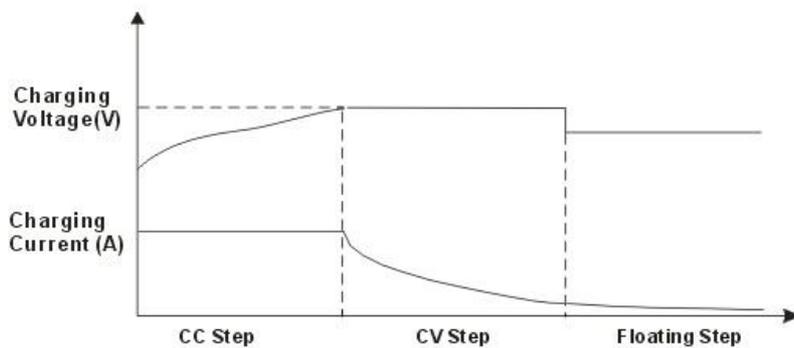
- Input: 12V DC
- Output: 220V~240V AC; 50Hz
- Pure sine wave output (THD < 3.0%) High efficiency up to 90%
- Can be used for most electronic products with AC input

Battery charger:

- Input: 220V~240V AC; 50Hz
- Output: 12V DC
- Charge Current: 15A
- Completely automatic battery charging: CC(constant current), CV(constant voltage) and float stage.

2.2 Charging Mode (3-stage):

Step 1: CC(Constant Current) Step 2: CV(Constant Voltage) Step 3: Floating



2.3 Digital Display

For high wattage inverter with charger, such as 1000W and higher, the front panel has digital display. The Digital Display Shows the DC Voltage input that the unit senses at its terminals and the percent of the output wattage.

3. Protection

Input protection

(A) Battery polarity protection:

If the battery input is connected in reverse polarity, the internal fuse of the inverter will blow and the unit should be send back for repair and resetting

(B) Battery Under Voltage shutdown:

When the battery voltage is lower than the preset value, the unit will automatically terminate the output and thus protect the battery from damage.

(C) Battery Over Voltage Protection:

When the battery voltage is too high, the unit will automatically terminate the output and the built-in buzzer will be activated to inform the user. After bypassing the OVP condition, the unit should be repowered ON to resume operation.

WARNING:

Choose suitable batteries that are compatible with the rated input DC voltage of the inverter.

If the input DC voltage is too low (eg: using 12V DC battery bank for 24V DC input models), the inverter cannot be started up properly. If the input DC voltage is too high (eg: using 48V DC battery bank for 24V DC input models), the inverter will be damaged!

3.2 Output protection

The display panel will show failure status using red LED indicators when unit is faced with abnormal operating conditions. This alerts the user to potential problems.

(1) Over Temperature Protection:

When the internal temperature is higher than the limit value, OTP will activate and automatically shut down the unit. Users should wait for at least 30 minutes before restarting the unit.

(2) AC Output Abnormal Protection:

When the AC output voltage of the inverter is too low or too high, the unit will turn off and should be restarted again.

(3) AC Output Short Circuit Protection:

When a short circuit situation occurs at the output side of the inverter or the loads increase greatly in a short period of time, the unit will turn off and should be restarted again.

(4) Battery Voltage Abnormal Protection:

When the battery voltage is too high or too low, this protection will be activated. The inverter will auto recover after the battery voltage goes back to a safe level and a user restart is not required.

(5) Over Load Protection:

When the output is overloaded, the inverter can still continuously provide power for several minutes. After that, if the overload condition is not removed, overload protection will activate. When the overload is too high, the overload protection will be activated instantly. For these overload protections, once activated, the unit must reset to recover.

4. Installation & Wiring

(A) Wiring for Batteries:

Wire connections should be as short as possible and less than 1.5 meter is highly recommended.

Make sure that suitable wires are chosen based on the current rating.

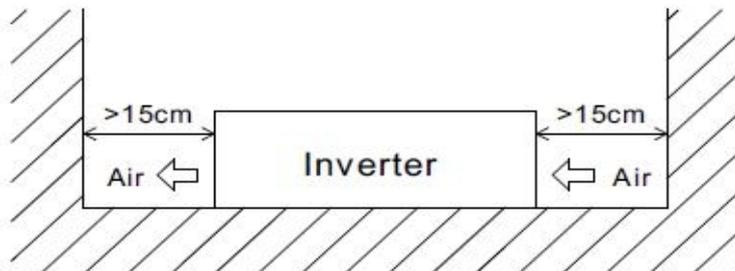
Too small of a cross-section will result in overheating and could be dangerous.

(B) Requirements for Installation:

The unit should be mounted on a flat surface or holding rack with suitable strength.

In order to ensure the lifespan of the unit, please refrain from operating in environments of high dust or moisture. Please make sure that ventilation is not blocked and avoid long term operation within high ambient environment or continuous overloading.

There should be no barriers within 15cm of the ventilation holes.



(C)  Important notice on output load:

This unit can power most equipment that needs an AC source, however for certain types of load, the unit may not work properly.

(1) Since inductive loads or motor based equipment need a large start up current (6~10 times the rated current), the inverter may not start up successfully with these kind of load.

(2) When the equipment output is capacitive or rectified, (such as switching power supply), it is suggested to operate this equipment at no load or light load during start up. To ensure smooth power ON, you should increase the load only after the unit has started up.

5.Failure Correction Notes

The unit should be serviced by a professional technician. Any improper usage or modification may damage the unit or result in shock hazard. If you are not able to clear the failure condition, please contact us or any of our distributors for repair service.

For Warranty and Support – 8ZED.com

| Status | Possible Reasons | Ways to Eliminate |
|---|-------------------------------|--|
| No AC output voltage | Abnormal input | Check the DC input source. Make sure the voltage is within the required range. |
| | Over temperature Protection | Make sure that the ventilation is not blocked or the ambient temperature is too high. De-rate the output usage or reduce the ambient temperature. |
| | Overload protection | Make sure the output load does not exceed the rated value or the instantaneous start up current is not too high (for inductive or capacitive loads). |
| | Short circuit protection | Make sure the output is not overloaded or a short Circuit exists. |
| Discharging period of batteries is too short. | Batteries are aged or broken | Replace the batteries. |
| | Battery capacity is too small | Reconfirm the specification and enlarge the battery capacity as suggested. |
| Fan does not Spin. | Clog with foreign objects | Remove the foreign objects. |
| | Malfunction of the fan | Repair required. Take it to a qualified service person when service or repair is required. |

For more inverter FAQ's – 8ZED.com

