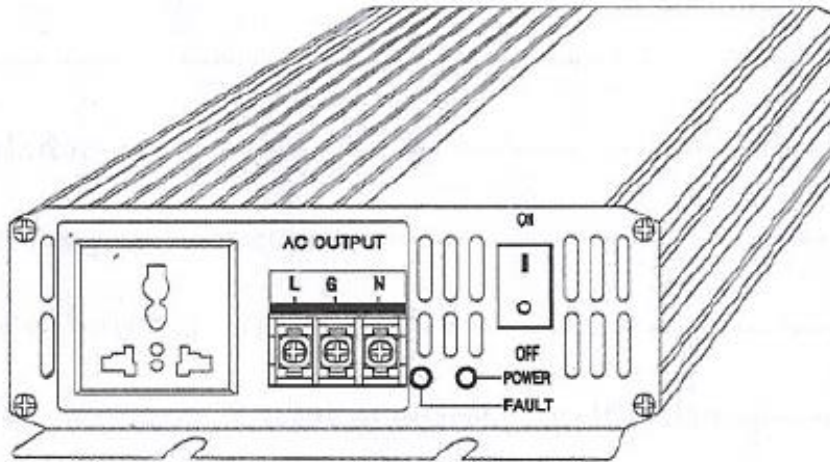


# PURE SINE WAVE POWER INVERTER



## Using Guide

DY-LG300~2000Watt

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# Contents

<b>I.Preface</b>	<b>1</b>
<b>II.Overview of the product</b>	<b>2</b>
<b>III.Safety precaution</b>	<b>3</b>
<b>IV.Introduction of the function</b>	<b>5</b>
<b>V.How to use</b>	<b>6</b>
<b>VI.FAQ &amp; solution</b>	<b>8</b>
<b>VII.Picture of the panel structure</b>	<b>10</b>
<b>VIII. Product's Technical Parameters</b>	<b>14</b>
<b>IX.Diameter of conductor &amp; table of current specification</b>	<b>16</b>
<b>X.Battery maintenance</b>	<b>17</b>
<b>i.Care and cleaning</b>	<b>17</b>
<b>Product guarantee card</b>	<b>18</b>

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## **Warning**

Please don't open or modify the part that isn't explained in the manual. It may cause serious accident if you do so.

## **I. Preface**

Our company is a high-tech enterprises gathering independent research and development, production and sale in an organic whole, we have 10 years experience in the R&D and manufacture of the solar energy high frequency inverter power supply. Main products include solar energy generating system, PV and wind energy grid-connected generation system, solar energy mobile power source, solar energy multi-functional lighting power, pure sine wave inverter, the inverter power source for sole purpose of communication, car kit, and electric vehicles. We devote ourselves in exploiting the market of the innovative products and improving service in order to become the industry pioneer since the establishment.

Our products are widely used in state grid power generation, solar energy generation, the motor home modification, power supply for the army, war, disaster area, safety& monitoring, outdoor work, medical emergency, steamer and yacht, frontier outpost, communication, instrument, railway and other high-tech field .

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## II. Product Overview

Many thanks for buying our inverters, please read the instruction carefully before you using it, and safekeep it for future reference.

Our inverters apply advanced MPU intelligent control, the core IC and power device apply superior imported device, which makes the outer circuit structure concise and strict, the way and tactics to control flexible and strong. It is light and has a reasonable design with the following characters, strong adaptability, high reliability, low loss, high conversion efficiency, strong anti-interference.

- Output waveform: pure sine wave
- Input Voltage: DC12V/24V/48V/60V/72V/96V
- Output voltage: AC110V/220V/230V
- Status display: LED
- Overvoltage undervoltage alarm, turn off
- Overload alarm, turn off
- Overtemperature alarm, turn off
- Short circuit alarm, turn off
- Cool intelligent fan
- Ultra low noise, low radiation

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### III. Safety Precaution

Do not obey the preventive rules, you may hurt yourself or destroy the inverter and your electric appliance.

1. Please pay attention to all the warning marks and obey to it, when you operate the inverter.
2. Please make sure you have use the three phase plug when you need it and examine if the inverter connects with the battery correctly
3. When the inverter need move or be reconnected, please make sure that the inverter have stop. If not ,the output port may be electrification, you may get electrocuted,



**Danger! Electricity!**

Our inverter output 220V AC power, and the output port may be electrification. So do not insert anything into the output port except for the plug.



**Do not get close to the inflammable and explosive dangerous goods**

The locations of the inverter should be far away from the inflammable and explosive dangerous goods



**Do not dismantle the inverter**

Dismantling or refitting the inverter, you may have a very dangerous accident.



**Do not connect the inverter to the wrong place**

Do not connect the inverter to AD power, such as your home use power.



**Choose the Proper Battery**

According to the inverters' specification, inverter should connect with standard 12V/24V/48V/60V DA power.



### Choose the Proper Wire

Choose wire with the proper wire diameter to bear the corresponding current to avoid be fused.



### Keep Good Ventilation and Heat Dissipation

Inverter would generate heat when working, so do not make inverter close to the thermal sensitive goods. And at the same time do not put anything on the inverters' housing to keep heat dissipation holes and fan good ventilation.



### Keep Dry

Inverter should keep away from the environment where is wet and closes to water. Keep button off when cleaning, then clean with dry rag (wet rag can't be used)



### Keep the Wire be Connected Correctly.

The positive and negative terminals of the inverter should be connected to the battery's positive and negative terminals correctly. Otherwise it would blow fuses. Inverter should shut off when it is out of state of use



### Keep the Inverters locating in the Proper Environment.

Inverter should locate in cool environment, and the temperature should be  $-15^{\circ}\text{C}\sim 60^{\circ}\text{C}$ .

Children is forbidden close to it and juveniles is forbidden to use it

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## IV. The introduction of the function

### 1. The function of the inverter output

When switch on the inverter on the front panel, the inverter source will change the DC in the storage battery into sine wave AC of the rated voltage and output it from the AC socket /terminal blocks.

### 2. The function of automatic voltage regulation

When the voltage of the storage battery waves between the under voltage point and the over voltage point and when load changes in the rated power, the machine is provided with the function of automatic voltage regulation when the AC outputs.

### 3. The function of over voltage protection

When the voltage of the storage battery is higher than the voltage point ,the inverter will cut off the AC automatically, meanwhile, the buzzer will give a warning; the inverter will not t work again automatically until the voltage drops to normal.

### 4. The function of under voltage protection

When the storage voltage is lower than the undervoltage point, this machine will cut off the inverter output in order not to break the storage battery because of overdischarge.

### 5. The function of overload protection

When the AC output power is over the rated power, the inverter will cut off the AC output automatically, the buzzer will give a long warning, the inverter will come back to normal only when a person cuts off the switch, repeals the overload and starts the inverter again.

### 6. The function of overtemperature protection

If the temperature of the inner case is too high, this machine will cut off the inverter output automatically, meanwhile, the buzzer will give a warning. The instrument will start to output AC when the temperature comes back to normal.

### 7. The function of short-circuit protection


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When the end of the AC output shorts out from inner or outer part directly or indirectly, the inverter will cut off the AC output automatically. The inverter will renew to put out. This function protects the inverter from breaking effectively.

## V、 Method of application

### 1. The choice of power source

The battery or DC stabilized power supply which is within the rated input voltage must be used, they can offer enough working current (no less than the rated input current of the inverter), for example, the output current of the battery of 500w, 12v inverter should be over 50A, the stability of the DC power supply should be better than 1%, the output ripple should be less than 10Mv.

 **warning.** If the acidic material contacts your skin or clothes when connecting storage battery, please clean with water or soap water immediately. If the acidic material comes into eyes, please clean your eyes with water for 20 minutes immediately and sent to hospital for treatment. Metal tool and jewelry must be away from the storage battery in case of accident. Safety goggles and protection suit must be worn to avoid danger if you operate in the high voltage storage battery. ( $\geq 48v$ )

### 2、 connect the power supply

Connect the terminal blocks of the cable and the input end of the inverter; connect the other terminal block to the battery. The red cable of controller should clamp the positive electrode and the black cable of controller clamp the cathode when connecting the power

### 3. connect to the load

Firstly, the output parameter (voltage, efficiency) of the inverter should meet the requirement of the load input. When connecting the inverter to the power supply correctly, the plug of the load should be inserted into the output socket of the inverter; turn on the inverter, the green indicator light will be enlightened. At this time, the inverter works normally.



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## Matters needing attention

1. When connected to the wires, from the cathode of the inverter to the cathode of the power supply at first, than from the anode of the inverter to the anode of the power supply. The terminal/terminal services must be screwed, otherwise the temperature of the wares will get high and the wire will melt the insulation materials, finally result in danger of melting the contact.
- 2.If connect to multiple load devices, should open one by one and open the equipment which the starting power is larger at first.
3. However the inverter has the overvoltage protection, if the input voltage is over the 30% of the rated voltage, the inverter may be demanded.
- 4.After using continuously, the surface temperature of the machine shell may be up to 60%( related to the load power, belong to normal situation ) ,but it need to be air circulation and be far away from the object that is easy to be influenced by high temperature.
5. When the inverter is no-load, it still flows through a tiny electrical current. When the inverter is not used for a long time, please cut the power supply.

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## **VI. Common Problem and Solution**

### **1. The Inverter can't Turn On**

1.1 The battery voltage is too low or demanded, to charge the battery again or change the battery.

1.2 The wire between the batteries with inverter don't connect successfully, please connect it again.

1.3 The anode and cathode of the battery or inverter is reversed, the fuse is fusing, please replace the suitable fuse.

### **2. The Inverter has not Output**

2.1 The battery voltage is too low, to charge the battery again or change it, and check the connection of the wires.

2.2 Input voltage is too high, according to the rated input voltage of the inverter to adjust the suitable input voltage

2.3 Load power is larger than the standard power, to use the electric which the power is lower than standard power or change the larger standard power inverter.

The inverter has over temperature protection, put it to lower the temperature for fifteen minutes in the ventilated place

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2.4 When using the low power electric, the inverter is failed to start-up, than the peak power of the electric is higher than the inverter, to change the larger power inverter.

### **3. Inverter alarm**

3.1 Under voltage alarm, the input voltage is too low, need to recharge the battery or replace the battery.

3.2 Overvoltage alarm, the input voltage is too high, need to replace the suitable input voltage.

3.3 Over temperature alarm, put the inverter for 15 minutes in cool ventilated place.

3.4 Overload alarm, turn off a part of the load or use electrical which the power is less than inverter rated power

### **4. the using time of the battery is too short**

4.1 Power consumption of electrical appliances is too big, change the battery with large capacity.

4.2 The battery is bad or damaged, replace the battery.

4.3 The electricity of the battery is not enough, replace the battery or recharge the battery.

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4.4 The wires attenuate decay the voltage, shorten the length of wire or use the thicker wire.

## 5. The inverter can only be carried on small power load

When a current flows through a wire, voltage will decay, shorten the length of wire or use the more thicker wires.

## VII. Panel diagram

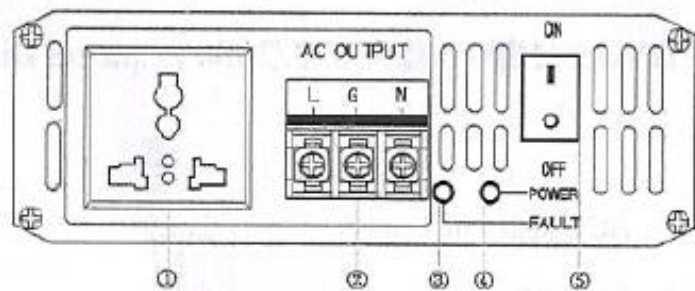
### Panel pilot lamp directions

Green light: when the inverter works, the light will brighten.

Red light: when the input voltage is too low, too high, short, overload or over temperature, the light will brighten.

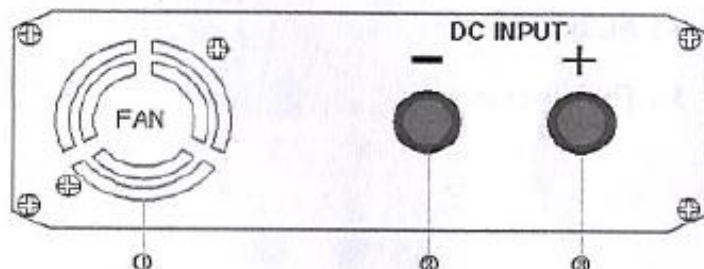
### DY-LG300W panel diagram

- 1 . AC output outlet
- 2 . AC output terminals
- 3 . Fault indicator
- 4 . Work indicator lamp
- 5 . The power switch



AC output panel

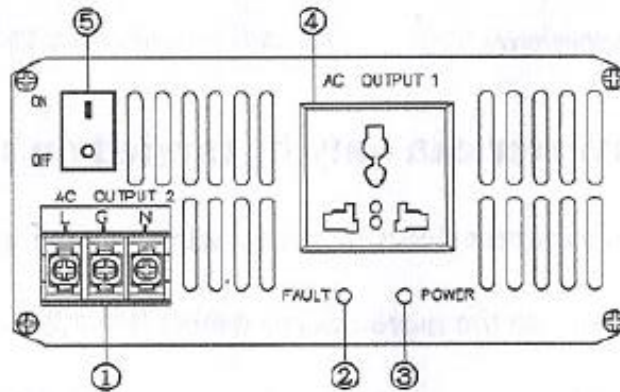
- 1 . Fan
- 2 . DC input negative terminal
- 3 . DC input anode terminal



DC input panel

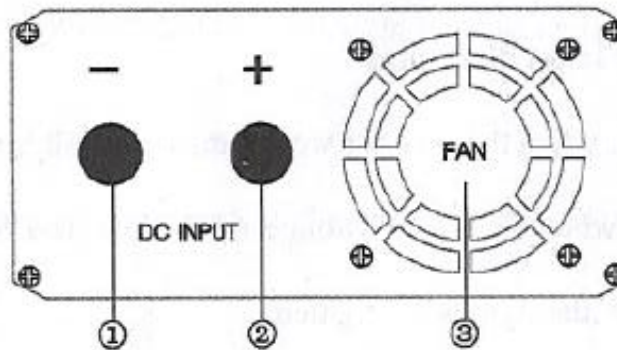
## DY-LG600W/800W panel diagram

- 1 . AC output terminals
- 2 . Fault indicator
- 3 . Work indicator lamp
- 4 . AC output outlet
- 5 . The power switch



AC output panel

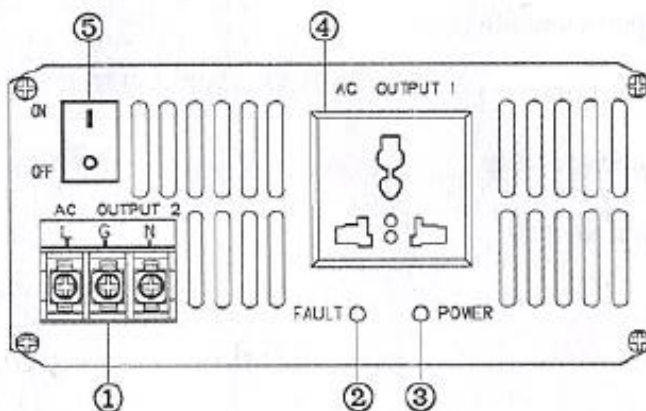
- 1 . DC input negative terminal
- 2 . DC input anode terminal
- 3 . Fan



DC input panel

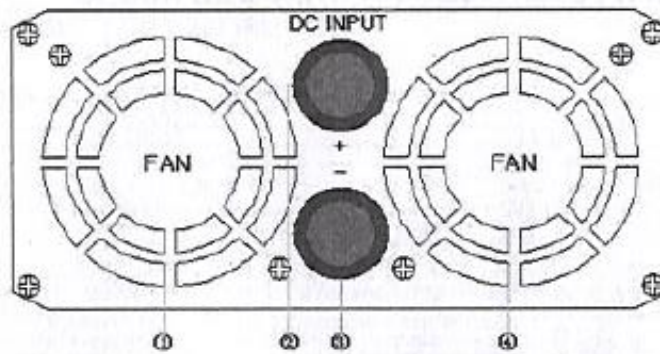
## DY-LG1000W/1500W/2000W panel diagram

- 1 . AC output terminals
- 2 . Fault indicator
- 3 . Work indicator lamp
- 4 . AC output outlet
- 5 . The power switch



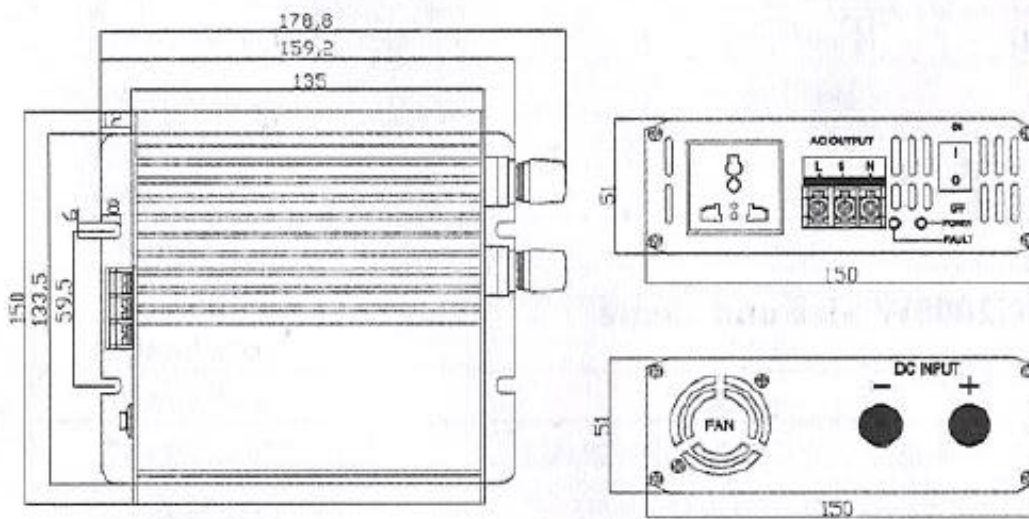
AC output panel

- 1、4 . Fans
- 2 . DC input anode terminal
- 3 . DC input negative terminal

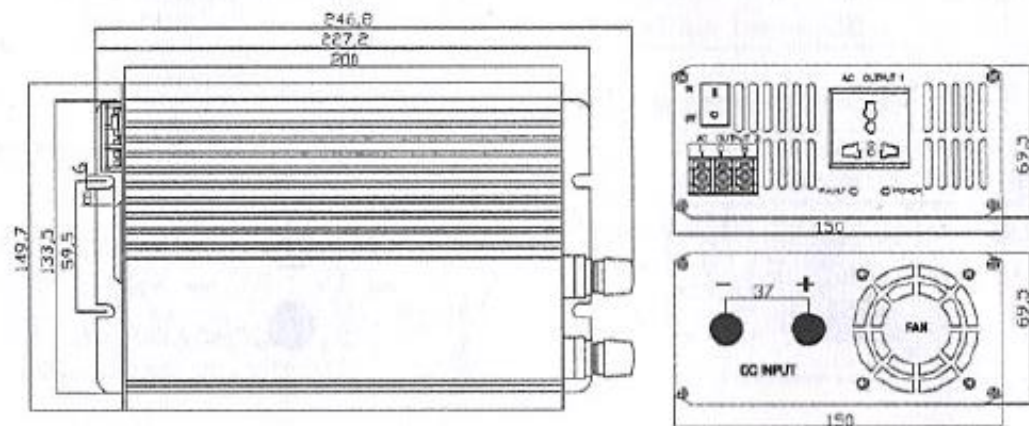


DC input panel

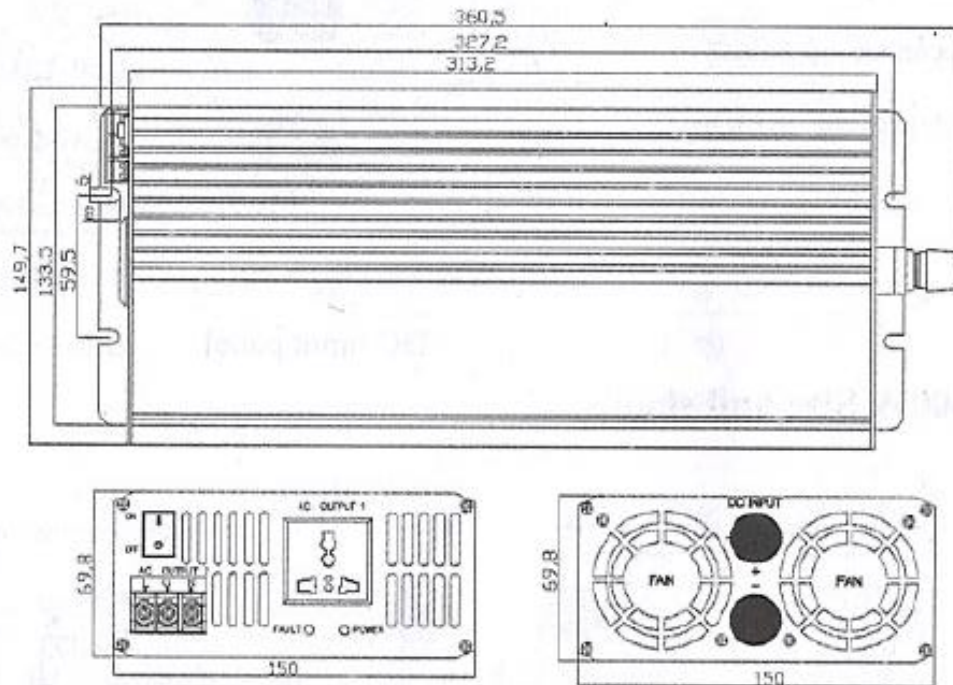
### DY-LG300W Size and shape



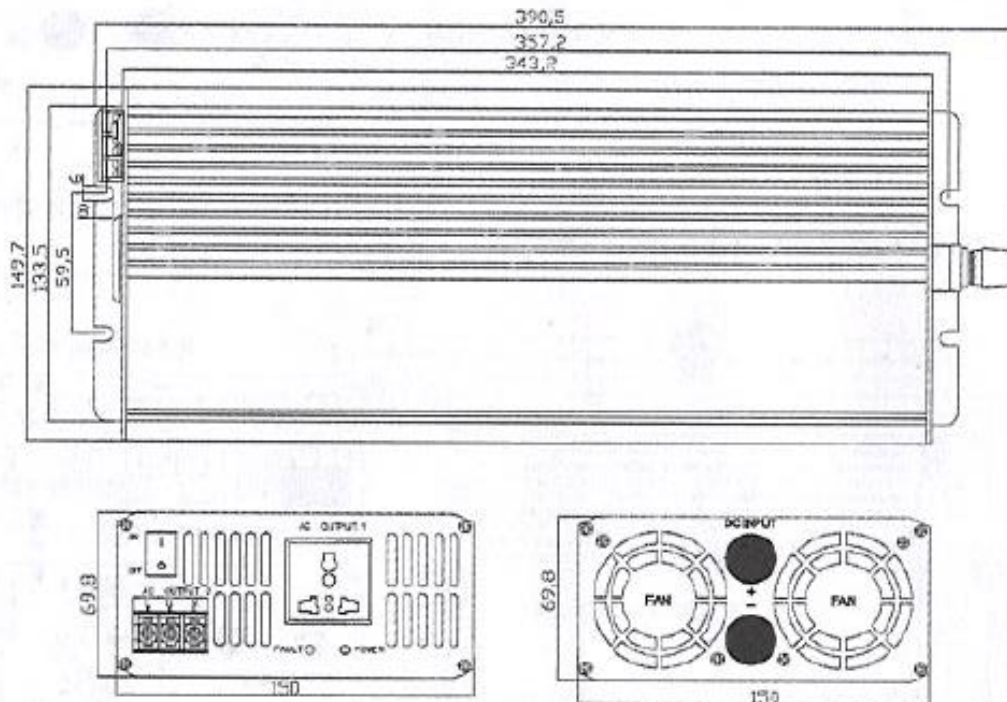
### DY-LG600W/800W Size and shape



## DY-LG1000W/1500W Size and shape



## DY-LG2000W Size and shape



## VIII. Product technical parameter

Table One (DY-LG300W/600W/800W/1000W)

Model		300W	600W	800W	1000W
DC Input	Rated Voltage	DC12V / 24V/48V			
	Low Pressure	DC10.5±0.3V / 21.0±0.6V / DC40.0±0.6V			
	Low Voltage Turn	DC9.5±0.6V / 20.0±0.6V / DC39.0±0.6V			
	Over Voltage	DC15.5±0.3V / 31.0±0.6V / DC60.0±0.6V			
	Efficiency	> 88%			
	DC Wiring Column	Red ( + ) /Black ( - ) Pure Copper Wiring Column			
AC Output	Rated Power	300W	600W	800W	1000W
	Continuous Power	300W	600W	800W	1000W
	Overload protection	120%±10%load			
	Output Voltage	110V/120V / 220V/230V			
	Voltage Waveform	pure sine wave			
	Frequency	60Hz / 50Hz			
	AC Socket	International Consent, 3P line contact bank			
Manage ment	Status display	LED			
	Malfunction	Buzzle			
	Fan Control	Intelligent Temperature Control			
environ ment /security	Working	-15°C ~ 60°C			
	Storage	-30°C ~ 70°C			
	Working Humidity	5% ~ 95% , No Condensation			
	Altitude	< 3000m			
	Noise	within 1m <60dB			
	Standards EMC				
Package	Product Size(mm)	179×150×50	247×150×70	247×150×70	361×150×70
	Carton Size(mm)	252×192×94	320×200×140	320×200×140	415×200×140
	Net Weight(KG)	0.9KG	1.5KG	2.0KG	2.4KG



**Table Two (DY-LG1500W/2000W)**

Model		1500W	2000W
DC Input	Rated Voltage	DC12V / 24V/48V	
	Low Pressure	DC10.5±0.3V / 21.0±0.6V / DC40.0±0.6V	
	Low Voltage Turn	DC9.5±0.6V / 20.0±0.6V / DC39.0±0.6V	
	Over Voltage	DC15.5±0.3V / 31.0±0.6V / DC60.0±0.6V	
	Efficiency	> 88%	
	DC Wiring	Red ( + )/Black ( - ) Pure Copper Wiring Column	
AC Output	Rated Power	1500W	2000W
	Continuous	1500W	2000W
	Overload	120%±10%load	
	Output Voltage	110V/120V / 220V/230V	
	Voltage	pure sine wave	
	Frequency	60Hz / 50Hz	
	AC Socket	International Consent, 3P line contact bank	
Manage ment	Status display	LED	
	Malfunction	Buzzle	
	Fan Control	Intelligent Temperature Control	
environ ment /security	Working	-15℃ ~ 60℃	
	Storage	-30℃ ~ 70℃	
	Working	5% ~ 95% , No Condensation	
	Altitude	< 3000m	
	Noise	within 1m <60dB	
	Standards	EMC	
Package	Product Size(mm)	361×150×70	391×150×70
	Carton Size(mm)	415×200×140	415×200×140
	Net Weight(KG)	2.8KG	3.9KG

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## IX. Wire diameter and current

The impedance of wire is in proportion to its length and in inverse proportion to its diameter. When you use the power, you should pay more attention to the input and output of the wire, in case that it may have an accident because of the overheating caused by over-current. Here is a table about the relationship between wire diameter and current in different temperatures. (Attention: The wire should apply to the below table, otherwise it can't be used)

diameter ( mm )	Cooper wire's temperature when power on			
	35°C	60°C	80°C	90°C
	Current ( A )			
2.5m <sup>2</sup>	15	20	25	25
4 m <sup>2</sup>	20	25	30	30
6 m <sup>2</sup>	30	35	40	40
8 m <sup>2</sup>	40	50	55	55
14 m <sup>2</sup>	55	65	70	75
22 m <sup>2</sup>	70	85	95	95
30 m <sup>2</sup>	85	100	110	110
38 m <sup>2</sup>	95	115	125	130
50 m <sup>2</sup>	110	130	145	150
60 m <sup>2</sup>	125	150	165	170
70 m <sup>2</sup>	145	175	190	195
80 m <sup>2</sup>	165	200	215	225
100 m <sup>2</sup>	195	230	250	260

### Attention:

1. Wire length shouldn't be too long, when really need more than 3 meters length shall be usually 1 or 2 times so now as the original with 2.5mm<sup>2</sup>wire should be made of 6 mm<sup>2</sup>
2. The portion of wire application international product strands of wire.

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## **X. Battery Maintenance**

Battery is a very important part of the inverter power system, the battery life depends on the ambient temperature and discharge times used under high temperature or depth discharge will shorten the battery life

1. Battery using the environment temperature should be between 15 to 25
2. If shall not apply to the inverter for a long time, it is suggest that every 3 months for the battery
3. Battery should not be individual replacement; replacement of batteries should be strictly abided by during the supplier's instructions
4. Under the normal circumstances, the battery life for 3 to 5 years if found condition need to replace the battery, must be a professional operation

## **XI. CARE AND CLEANING**

1. Use environment and the storage of this product service life and reliability have certain influence, therefore, please pay attention to avoid in the following environments

1.1 Beyond the specifications stipulated in the high and low temperature and damp environment

1.2 The places where vibration and vulnerable to collision

1.3 With gold dust properties corrosive substance salt and the site of combustible gas

2. If placed for a long time not to use, must place the inverter in the dry environment, inverter boot before, must first make the environment temperature rebounded above zero and save for a period of time

3. Regularly use dry cloth gently wipes off the dust on the surface of the inverter cabinet

4. Regularly use brush to clean the fan outlet and inlet

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## **Attention :**

Above contents are subject to change without prior notice, green new energy have the final power of interpretation.

The company is committed to technology innovation, and constantly provide better products and services to meet customer demand for product design technical specification update, without prior notice is given priority to with real products

## **Product guarantee card**

Products have strict test before they go out the company assure users by buyers as of the date of the warranty card within the power performance good and parts listed in the complete article provides warranty of free warranty service listed below:

A. caused by wrong operation, negligence is used, and irresistible factors caused to damage

B. once the our company technical personnel boot repair modified or altered without authorization remove immediately or seals

C. not listed in the manual of use warnings and precautions and store the inverter power supply damage

(III)Please save this card, and present this card when repair i and buyers receipt (invoice) for technical inspection

(IV)After the expiry of the warranty, if there are any issues that need to be repair, the company will charge the appropriate cost

Distribution unit postal code \_\_\_\_\_

Product Model Own number \_\_\_\_\_

cost of time Handling personnel \_\_\_\_\_

### Maintenance Register

Time	Kind	Detail	worker	User sig

Attention: User should fill the table and copy it, deliver it to company to keep after signing.