

# Portable Solar Power System



—ISS1000Z—

## Operation Manual General Version

**Congratulations and thank you for purchasing our portable solar power system.**

**Carefully read, understand and comply with all instructions before use.**

## Safety Instructions



1. Please read this manual thoroughly before use.
2. Please not to use high power devices beyond the permissible range of the system.
3. Ensure efficient exhaust ventilation in the working area. Keep it from exposure, damp environment and rain.
4. Away from inflammable and explosive materials.
5. Keep out of the reach of children.
6. Overhauling shall only be taken as directed by professionals in the event of the failure of the product instead of changing the internal wiring privately.
7. Prevent the product and solar panel from dropping and shocks. Should any damage be incurred you may switch off the power and approach help from professionals.
8. Use soft dry cloth for cleaning after turning off the main switch. Do not use wax, benzene, thinner, pesticide, air freshener, lube or detergent for cleaning.
9. Never connect to adapter junction box of AC house current or commercial power like house circuit.
10. If the product is not used for a long run, please full charge battery and make sure to turn off system main switch. Please charge the battery in time while the red light of battery power red indicator is on. Otherwise the battery will be damaged and this situation is outside the scope of free warranty.



### Special Instructions:

**Our company reserves the right to change the product;  
The manual is subject to change with technical improvement without notice;  
Base on the real product in case of any change of appearance or color.**

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## **Part I                    Brief introduction to portable solar power system**

With the increase demand of global energy and impacts on human being environment caused by highly energy-consuming, energy saving and emission reduction has become the major trend of global energy industry development. Photovoltaic generation has made remarkable achievements since the first functional solar cell in 1954, which has being applied to every field. For domestic customer, the principle advantages would be the performance of free from contamination, long service period, quiet, small cubage, modular design, easy installation, and its portable location.

### **1.1 Basic operation principle of portable solar power system**

1. Electric energy is generated by photoelectric converting when solar panel is in a place having access to sunshine. It is then stored in the battery by the built-in charge controller of the product.
2. Direct current in the battery is inverted by the internal inverter when power is needed for appliances; DC is also able to be output for DC drives to meet different requirements.

### **1.2 Main characteristics of portable solar power system**

1. Simple in system structure, safe, reliable and portable.
2. Equipped with charge controller, inverter and batteries.
3. Internal modular design, parts of pull and plug type connection, easy installation.
4. LED indicator lights with long service period and easy to understand.
5. Direct output of AC and DC for family basic electricity demand.
6. Available to be charged by main supply in case of not being satisfied with photovoltaic charging conditions. (Main supply charger needs to be prepared by the customer. E.g.: 12V output charger used for 12V 22Ah ~35Ah battery.)
7. If there is far more demand than the equipped battery can serve, customer can choose 12V battery, connecting to our product, expanding capacity as well as service time.
8. The product can be used in the car to provide enduring power supply as well as charge the car batteries (with help of car charging wires).
9. Independent switch is equipped with each AC output and system MS is also provided to realize convenience of customers.
10. Solar panel is supplied along with bracket system for better installation and carry.
11. Battery capacity indication enables the customer to view the remaining power and charge condition.
12. The product has perfect intelligent protection system to avoid over charge, over discharge, short circuit, overload, high temperature or under voltage.
13. Provide enduring and clean electricity for electric tools, lighting, mobile, pc, fans and so on in conditions of camping, travel, disaster relief, power shortage areas, grazing and islanders.

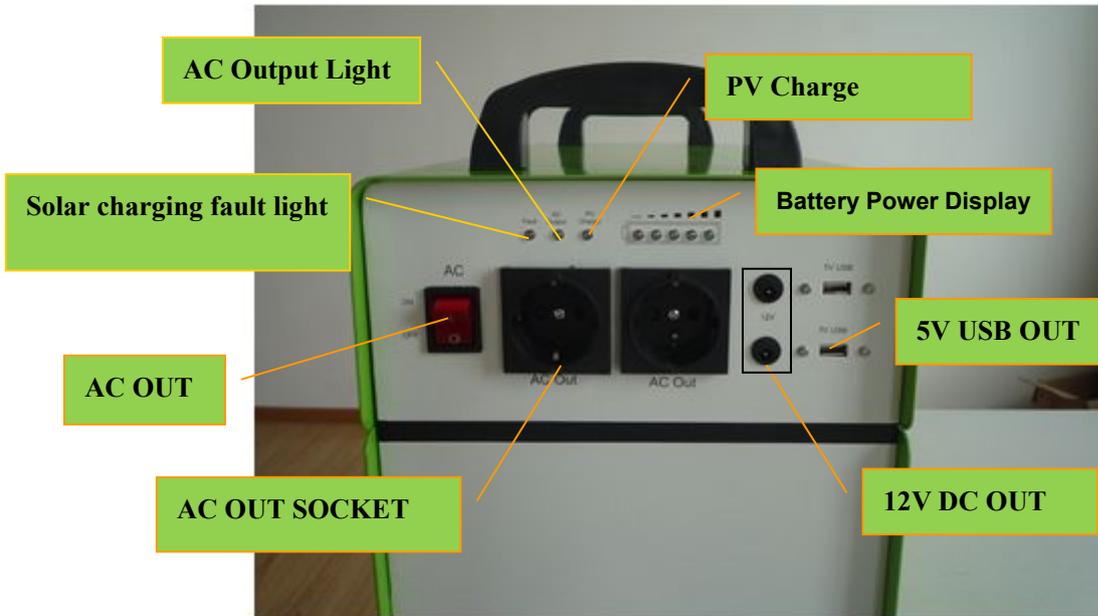
## Part II Main technical parameters of the system

### 2.1 Technical Parameters:

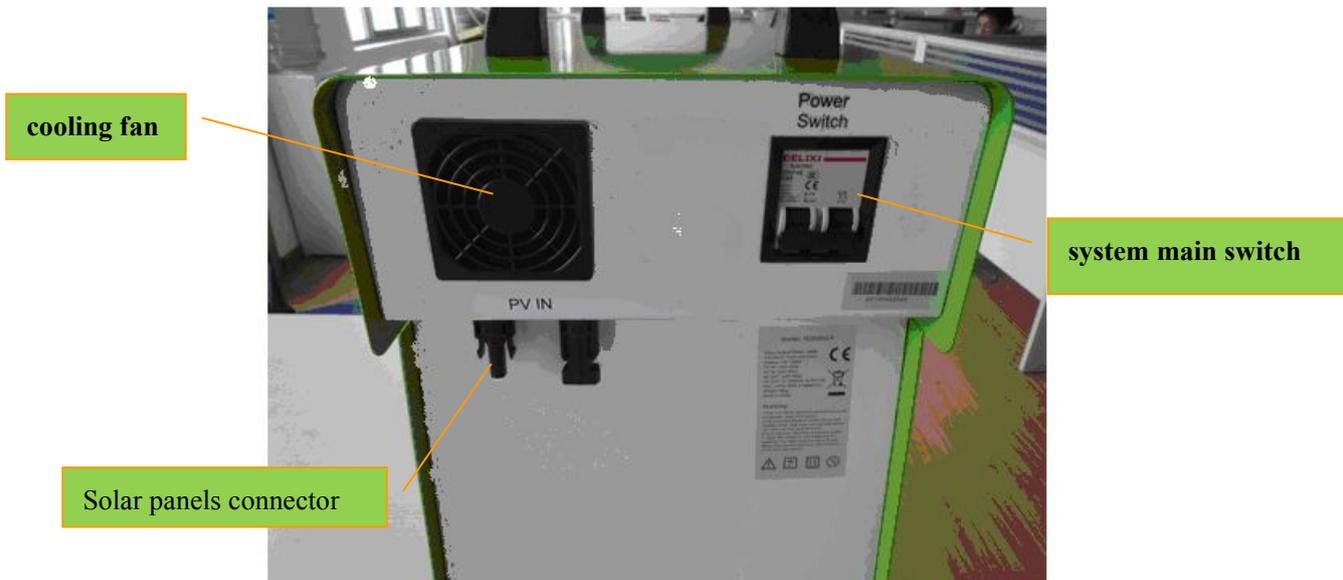
|                               |   |
|-------------------------------|---|
| <b>Model:</b>                 | <b>ISS1000Z</b>   |
| <b>System Specification:</b>  |   |
| Rated Output Power:           | 1000W   |
| Solar charge controller:      | 24V 20A   |
| Solar inverter:               | 110V/220V/1000W   |
| Output waveform:              | Pure sine wave  |
| Battery capacity:             | 12V55Ah*2   |
| AC Output (Europe plug):      | 2*220V/50Hz   |
| DC Output (USB)               | 2*5V(500mA)   |
| DC Output (DC2.1 Plug)        | 2*12V 3A  |
| switching time(AC and SOLAR)  | ≤20ms   |
| Peak conversion efficiency    | 82%   |
| AC In connector:              | CONINVERS   |
| Solar panels connector        | MC4 (16~19V) (below 15A)  |
| AC Output Socket:             | Universal \ British \ German \ French \ Australian \ American \ India |
| Fuse Size                     | 5 x 20 5A   |
| Overload Protection:          | Yes   |
| Under-voltage Alarm:          | Yes   |
| Overheat Protection:          | Yes   |
| Short-circuit Protection:     | Yes   |
| Battery Power Indicator:      | Yes   |
| System charging mode          | SOLAR   |
| <b>Mechanical Data:</b>       |   |
| Dimensions of System Box(mm): | L575*W255*H490  |
| Net Weight of System Box(kg): | 55  |

### Part III Operating instructions

#### 3.1 Connecting drawing of the system



Front



Back

## 3.2 Operating procedure of the system

### 1、Preparation before start

- I. Check the output voltage and power with the technical parameter. Over value would result in damage to the product. Ensure to connect MC4 terminal (or equivalent terminal) of solar panel. Improper unit would not be able to be connected.
- II. Check the output voltage conforming to voltage on data plate, as well as ensuring no exceeding of the rated power.
- III. Check the working environment. Do not use the product in wet, rainy conditions or near heat source.
- IV. Check the conditions of the product. Do not use when there is any leak of colloid substance or damaged output terminals. Never try to carry or hold the product when the screws on cover are missing or the hanging is loosened.

### 2、Connecting to external devices

#### I. Connect to solar panel

Connect the output wire of solar panel to the MC4 terminal when it is needed to charge the product.

#### IV. Connect to the 12V DC led bubble lights

Customer can connect the 12V bubble lights to the holder with 10M cables.

#### V. Connect to 5V DC devices

Use USB charger port to connect the devices of 5V 500mA need to be charged including mobile, pc and lighting. Extensional connecting wire is also available in the optional accessories list besides self-equipped USB terminal connecting wire to connect the product and devices.

#### VI. Connect to AC devices

Connect the AC devices like PC, electrical tools or lighting equipment to AC OUT socket of the product.

### 3、Starting-up sequence

Connect the external devices firstly like solar panel and battery charger, then turn on the Power Switch; finally connect the appliances (turn on AC switch when using AC devices). Examples are given as follows:

#### I. Charging solar panel:

Connect solar panel then turn on the Power Switch (MS)

#### II. Charging external battery charger

Connect external battery charger then turn on the Power Switch (MS)

#### III. Charging solar panel simultaneously with AC appliances

Connect solar panel then turn on the Power Switch (MS), using the AC appliances and finally turn on AC switch (AC output switch).

#### IV. Charging solar panel simultaneously with 5V 500mA DC appliances

Connect solar panel then turn on the Power Switch (MS), using the 5V 500mA DC appliances finally.

#### V. Charging external battery simultaneously with AC appliances

Connect external battery then turn on the Power Switch (MS), using the AC appliances and finally turn on AC switch (AC output

switch).

**Attention:**

1. The total home appliances loading power shall not exceed the total power of systems. The warranty guarantee is not valid if the system or home appliances are damaged because of the over loading.
2. Pls use our original accessories (solar panels,fan,led bubbles,light cables). The warranty guarantee is not valid if the system or home appliances are damaged because of using other brand accessories.
3. If connect the AC electric cable to the system, pls in strict accordance to the requirements of system (Voltage, current etc.)
4. The panels which shall be strict in accordance with the requirement of the systems. The warranty guarantee is not valid if the system or home appliances are damaged because of mismatching panels.
5. The system shall be used under the safe environment,otherwise we don't take any responsibility if the system have been damaged.

**Part IV Maintenance**

**4.1 Explanation of alarms**

| Alarm prompt  |                            | Explanation  |
|---|----------------------------|--|
| bumming   |                            | under voltage of battery, close AC output          |
|  | indicator: fluid twinkling | Charging by solar panel                            |
|  | indicator: no twinkling    | System without any electric                        |
|  | indicator: red             | low power  |
|  | indicator: partly on       | real electricity available, 20% for each indicator |
|  | indicator: on              | connected with solar panel                         |
|  | indicator: on              | AC output: on                                      |
|  | indicator: on              | AC output : failure                                |
| AC lights bright  |                            | The AC electric have been connect to the system    |

## 4.2 Daily maintenance and change of battery

### Daily maintenance:

Lead crystal battery is used for our system which asks for timely charging after discharge. Charge the product once per month in case of unused for a long time to maintain perfect performance. Please change the battery every 500 cycling discharge (it would be less than 500 due to improper use) or after using of more than 2 years.

### How to replace the battery



### (Picture just for reference)

1. Open the cover plate on both sides of the down part of the machines
2. Taking out the screw between battery and the battery fix mount. (each side 3pcs, total 6 pcs)
3. Screwing off the Screw, which is fixed on the negative and positive pole of battery and take out the cable,
4. Taping insulating tape to the negative and positive pole of battery and take out the battery from the cabinet.
5. Take another same size battery into the system cabinet and connect the system's negative (Black one) and positive (Red one).
6. Fix the battery to the system by screw and the battery fix mount.
7. Fix the cover plate to the both side of the system cabinet.

### Attention:

**Pls turn off the system switch before opening the system's cabinet.**

**Pls check the battery's negative and positive pole carefully to avoid the system short circuit because of the wrong connecting.**

## Part V

## FAQ

**Q: The product has been connected to solar panel, but why is the PV Charge indicator still off?**

A: Ensure the solar panel has been correctly and tightly connected to the MC4 terminal. The indicator would be off when the working condition is not satisfied or in the dark.

**Q: Why there is no AC/DC output?**

A: Check the indicator of battery capacity. When the product is short of power, the indicator would be off. Please charge the product timely to avoid damaging the battery, which would shorten the service time of our product.

**Q: Why is the indicator still bright when turning off the product?**

A: It is normal. There is a slow discharging period lasting about 5 seconds of the inner electronic components when turning off the product.

**Q: What's the reason for different discharging hours under same appliance ?**

A: It's normal because time of discharging is effected by the outside temperature, using time or other factors.

**Q: What's the reason for different charging hours under same solar panels?**

A: The charging time listed in the technical parameter is calculated in the condition of 4.5h of sunshine heating with optimal environment. And the real charging time is determined by the natural conditions like daily sunlight hours, sun light intensity and temperature, which would be varied.

**Q: What's explanation of that when the electric capacity showed low power when applying high power appliances, while using low power appliances it turned to be more electric capacity?**

A: The indicator shows the current remaining power under the load power. As in the same condition, the servicing time for high power appliances would be less than the low power ones.

**Q: Why does the capacity turn to be low while it went back by switching off?**

A: It is a dynamic changing during working period and the indicator shows the current remaining capacity during working conditions. When switch off, it turns to be standby showing the actual available capacity.

**Q: Why does it turn to be gradual during charging showed by the indicator when charging by battery?**

A: It varies by different batteries that used, which results in various charging time due to different parameters.

**Q: What's the best time to charge the battery?**

A: The battery needs to be charged when the indicator turns red and keep the product fully charged for long time storing.

## Part VI Guarantee

### 1.1 Product guarantee:

**Main machine guarantee time: 1** years limited warranty (lifetime: more 10years)

**Battery guarantee time: 1** year (lifetime: 2-3years, cycle 750 times)

**Solar panel guarantee time: 5** years (lifetime: around 25years, 90% output power at first 10 years, 80% output power at second 10 years).

Keep the card for  
guarantee to keep  
in repair.

# Guarantee

## User File

|                                  |  |     |                |     |  |
|----------------------------------|--|-----|----------------|-----|--|
| User name                        |  | Sex |                | Age |  |
| Address                          |  |     |                |     |  |
| Telephone                        |  |     |                | Zip |  |
| Purchasing address               |  |     |                |     |  |
| Retail price                     |  |     | Odd Numbers    |     |  |
| Commodity name and specification |  |     | Model No.      |     |  |
| Dealer Signature                 |  |     | User Signature |     |  |

## Guarantee Item

1. 1 years upon date of production, we will guarantee to keep the power box in repair. (not including the battery and accessories.)
2. 1 year upon date of production, we will guarantee to keep the battery in repair.
3. 5 years upon date of production, we will guarantee to keep the solar module in repair.
4. Guarantee service is subject to normally using.
5. The guarantee do not cover any normal wear and tear, misuse, or which has been damaged through abuse, alteration, improper installation or application, unauthorized service or modification, storage, transportation or resulting from any power failure surges, natural disaster, or other events outside Seller's control.



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**RoHS CE**