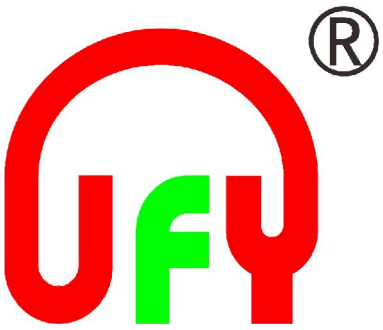


XPI SERIES
OFF-GRID SOLAR POWER SYSTEM

INSTALLATION AND OPERATION
USER MANUAL

1. Introduction

The manual includes the content of installation, operation and application.

Please read the manual carefully before installation. All operation MUST be taken by professional technician to ensure normal operation.

Keep the manual properly and take it as the reference at any time.

2. Mark and Symbol

Mark and symbol that referred in the manual.

WARNING

Failure to follow the structions would harm personal safety, and affect the reliability of the equipment or lose its data.

NOTE

Additional data and information

Must step

Lists for Off Grid Solar Power system Model

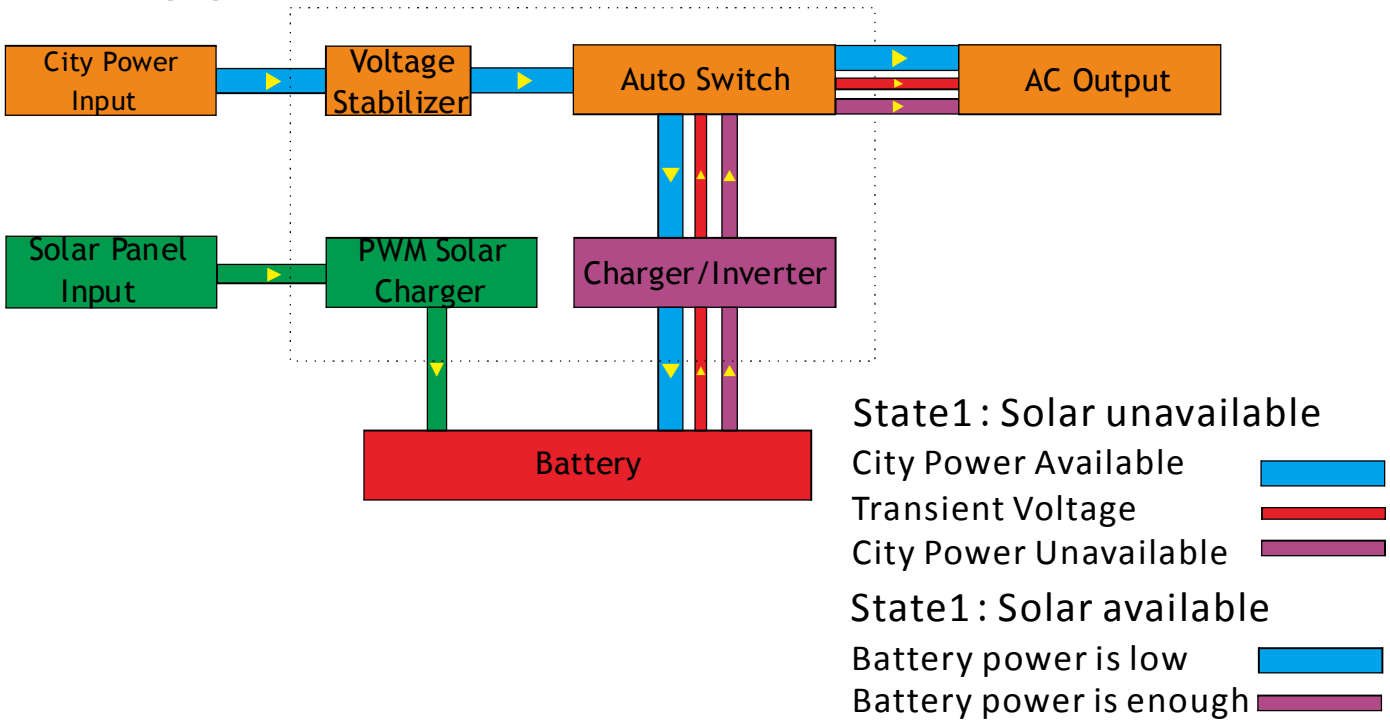
Rated Power	Back View	Input Connection	Output Connection	Battery Connection
350W	Back View-1	Input Connection-1	Output Connection-1	Battery Connection-1
500W				
700W				
1000W				
1500W	Back View-2	Input Connection-2	Output Connection-1	Battery Connection-1
2000W				
3000W				
3500W				

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Structure information

Equipment Structure



Characteristics

- ☐ Ture sine wave output, strong adaptability to load
- ☐ RS232 interface, Intelligent communication
- ☐ CPU control technique with excellent performance
- ☐ Wide range, high-precision, and full-automatic voltage stabilizer
- ☐ Overall protection includes overload protection, short circuit protection, over-voltage protection, under-voltage protection and over-heating protection.
- ☐ LED display/ LCD display
- ☐ Strong adaptability to city power, suitable for generator(optional)
- ☐ Unattended function, can turn on/off automatically
- ☐ Intelligent battery management, overcharging protection, as to extend the battery working life

Safety

Proper Usage

1. The equipment supplies uninterrupted power for load
2. The equipment meets the information safety requirement, suitable for office, home, commercial and bank etc.
3. With external battery can extend power supply time, external battery connected as request.

⚠ WARNING

JFY takes the user's personal safety in the most important position to consider, therefore, the user or operator MUST read the steps carefully and follow the rules strictly during operation.

- Even if all switches have been turn off, there will be HIGH-VOLTAGE DANGER inside the equipment. Any required operation to move and open the protection plate MUST be finished by authorized technical people.

Safety Caution

To make sure use the equipment safely, please follow instructions:

1. Please read the manual carefully before usage, overload usage is NOT allowed.
2. If any fault, please cut off the power immediately and contact the local agent.
3. If fire happened around, MUST use dry fire extinguisher. There will be electric shock DANGER for using liquid fire extinguisher.
4. The equipment DOES NOT have switch for city power. JFY suggests install a city power switch (>25A) in front of the equipment, in case to cut down city power for emergency. Besides, connect the equipment to the nearest socket in order to unplug to disconnect the equipment and city power for emergency.
5. DO NOT place liquid container above the equipment, in order to avoid the liquid pouring into cabinet and leads to short circuit, electric shock or fire.

The equipment MUST be installed on good grounding environment to ensure safety

Emergency situation



WARNING

All loads MUST be turned off before connecting to the equipment. When fire happened to equipment, please DO NOT use water to put out the fire.

Leakage Current



WARNING

Please connect grounding before other connection.

Wireless Interference

This equipment is A class Interference to other wireless products. Equipment that sensitive to electromagnetic interference please DO NOT get close to it, such as emitter, receiver, radar ,metal detector and so on.

Battery

Battery maintenance MUST be operated by authorized technician.

1. Internal or external battery both contains electrolyte. Normally, please keep the battery dry. When battery damaged, the electrolyte may leak out, and it's harmful to eyes and skin. If that happened, please flush immediately with plenty of clean water and go to hospital for check.
2. The battery terminals have voltage, it will be DANGEROUS when quantities of battery connect in series.
3. When battery terminal is short circuit or discharging of large current, it will damage the battery and may cause fire.
4. Battery is sealed. It needs to charge the battery, even though full charged in the past, after storage or NOT using for 6 months at 20ºC, otherwise, it may cause battery failure. At this moment, it is required to turn on the equipment to charge battery. If NOT following this suggestion, it can NOT promise the normal working of it. We suggest charge battery every 4 months.

5.After first charging, normally, the battery capacity is always less than 100%. It can only reach requirement after several times charging/discharging cycle.

6.Avoid environment pollution, battery MUST be disposed according to the rules and regulations for toxic or harmful waste

Repackage

Please follow below items for package:

- 6 hours after the final charging before package.
- Place the equipment on the ventilative and bibulous material (like 100μm polyethylene)
- Vacuum-packed NOT allowed

Transport and Storage

Transport

It's been fully checked before transport, please check if the package damaged or NOT when receive the goods. If any damage or lackage, please contact the local agent within 7 days after receiving.

Unpack

To avoid any damage, please be careful when carry the equipment and check if all the packing materials complete or NOT.

Storage

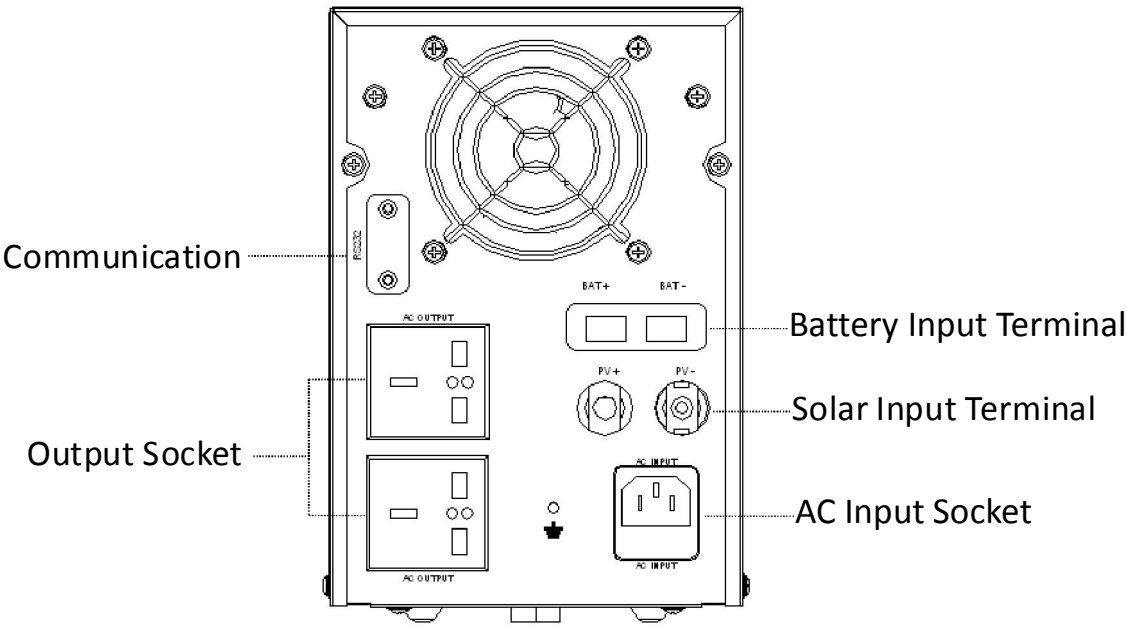
After receiving the equipment, if it stays without use within 7 days, please store it under storage condition, and ensure the equipment being stored in a clean, dry environment with temperature 0ºC~35ºC.

Carriage

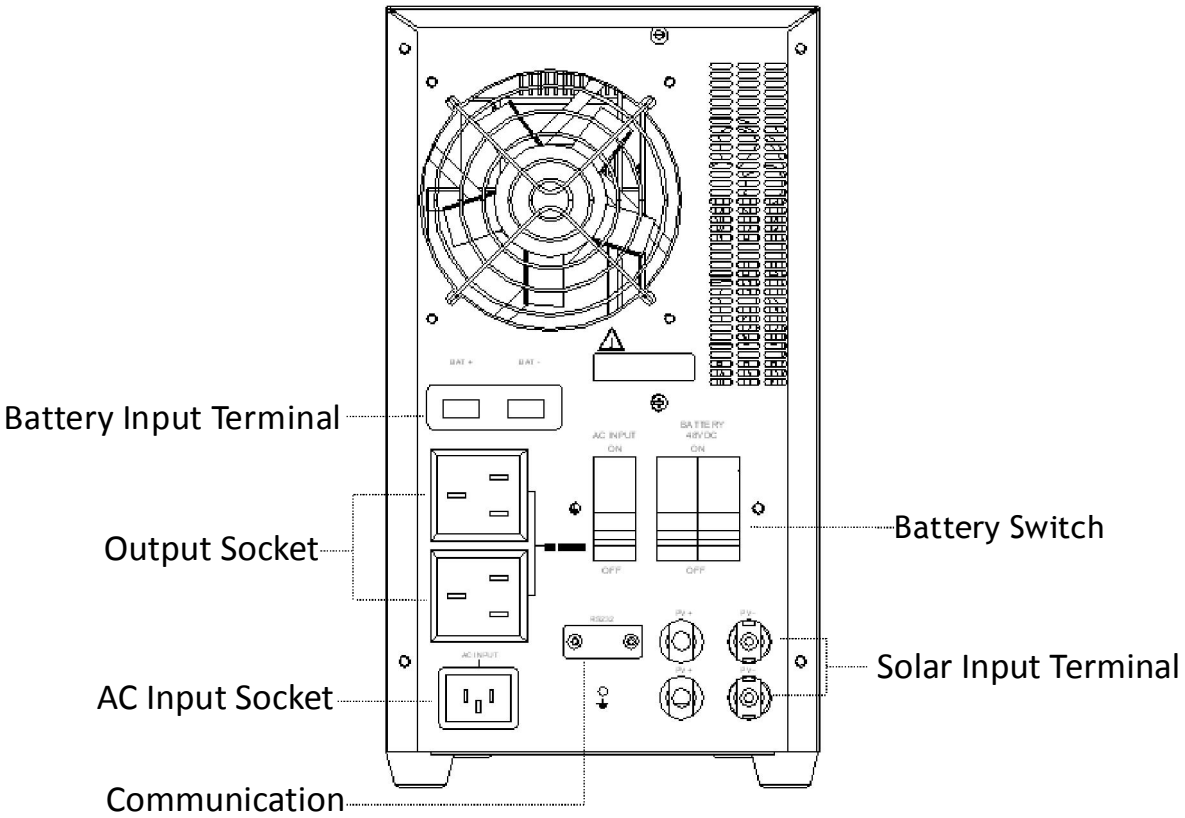
Equipment MUST be carried upright and carefully, any drop or fierce hit may damage the equipment.

Back View

Back View-1



Back View-2



Installation

WARNING

The equipment MUST be installed by authorized technician in compliance with local or national standard and law.

Environment

The equipment MUST be installed on the level shelf or ground, and with proper temperature and humility.

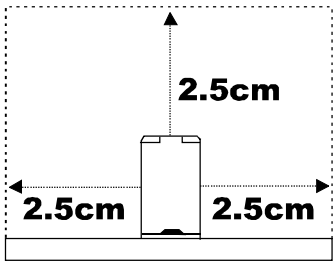
NO materials placed on the equipment.

Working temperature for the equipment normally is 20 ºC ~ 35 ºC, ideal is 15 ºC ~ 25 ºC and its Max. Continuous working hour is 8 hours when reaches 40 ºC

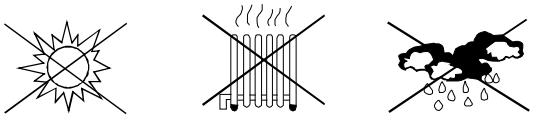
Battery lifetime designed at the temperature 20 ºC , it will be decreased to 50% when the temperature rises every 10 ºC.

Space Requirement

Leave a 2.5cm space on the upper part and around of the equipment to ensure the ventilation.



- Avoid direct sun
- Avoid overheating
- Avoid wet and liquid
- Avoid dust



The max. Current and recommended cable's diameter

Max. Current and recommended of cable's diameter as following (accoding to IEC-287 standard)

1) PVC insulated copper wire (@70 ºC) .
2) Ambient temperature can be NOT higher than 40 ºC
3) Larger cable MUST be used when can not meet the above 2 conditions

Max. Capacity(VA)	500	1000	1500	2000	3000	5000
Max.Input Current/A	2.3	4.5	6.0	7.3	11.5	17
Input Diameter/mm²	0.75	0.75	1	1	1.5	2.5
Max.Output Current/A	1.5	2.8	4.2	5.5	8.2	13.6
Output Diameter/mm²	0.75	0.75	1	1	1.5	2.5
Grounding Wire Diameter /mm²	0.75	0.75	1	1	1.5	2.5

Table 1：The Max. Current of UPS power supply and wiring specification.

Max. Capacity(VA)	300	500	600	750	1000	1200	2000	3000
Max.Input Current/A	2.3	2.3	4.5	4.5	6.0	7.3	11.5	17
Input Diameter/mm²	0.75	0.75	0.75	0.75	1	1	1.5	2.5
Max.Output Current/A	1.5	1.5	2.8	3.5	4.2	5.5	8.2	13.6
Output Diameter/mm²	0.75	0.75	0.75	0.75	1	1	1.5	2.5
Grounding Wire Diameter /mm²	0.75	0.75	0.75	0.75	1	1	1.5	2.5

Table 2：The Max. Current of inverter power supply and wiring specification.

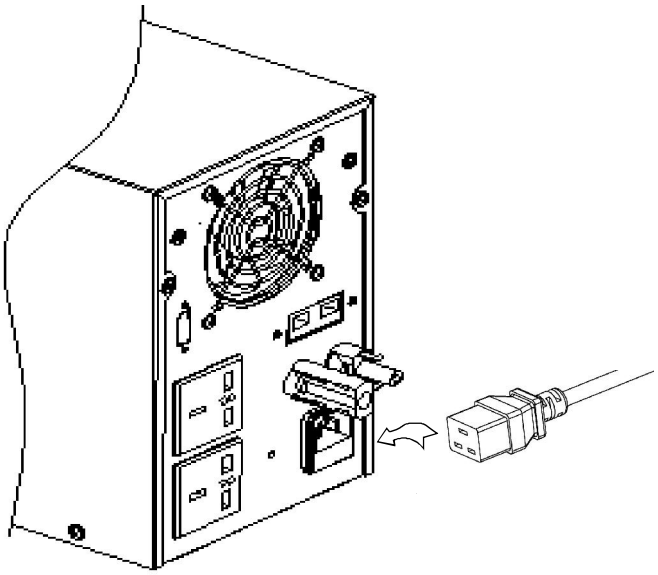
External Protection Device

External device MUST adopt appropriate breaker or fuse.

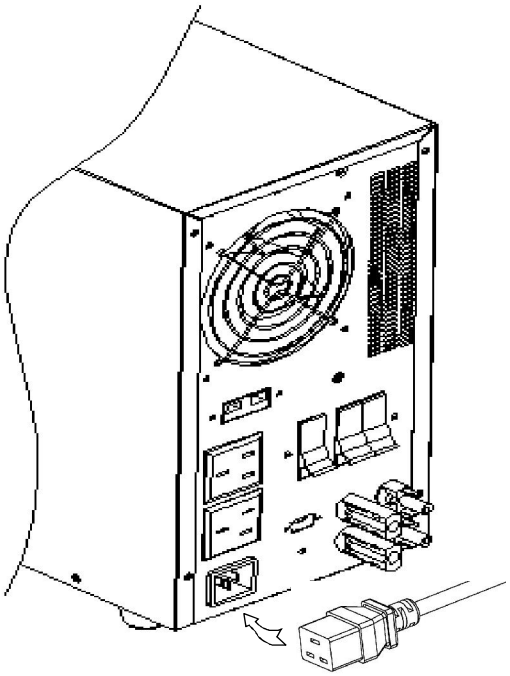
NOTE

The external battery MUST be near the equipment and adopt appropriate breaker and fuse.

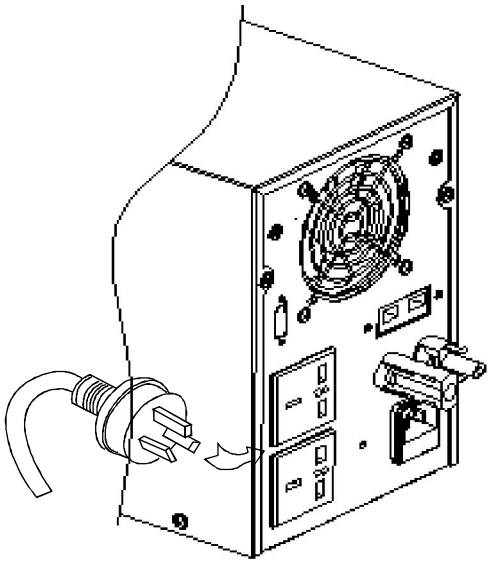
Input Connection-1



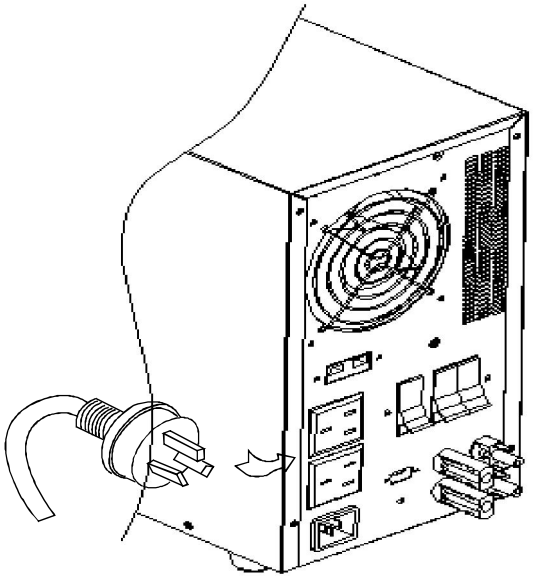
Input Connection-2



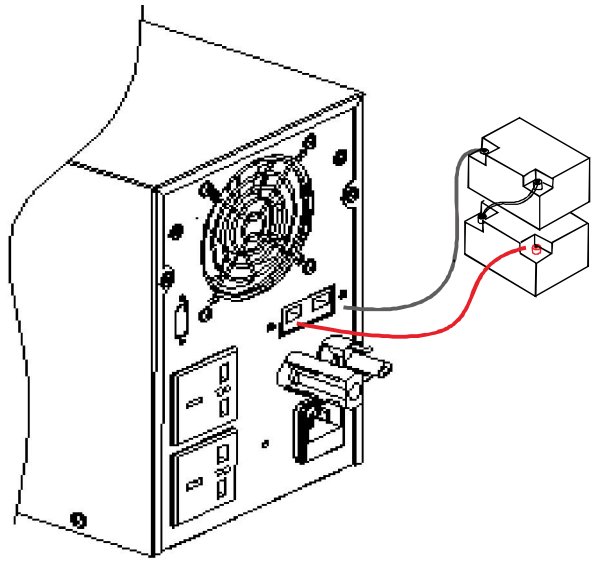
Output Connection -1



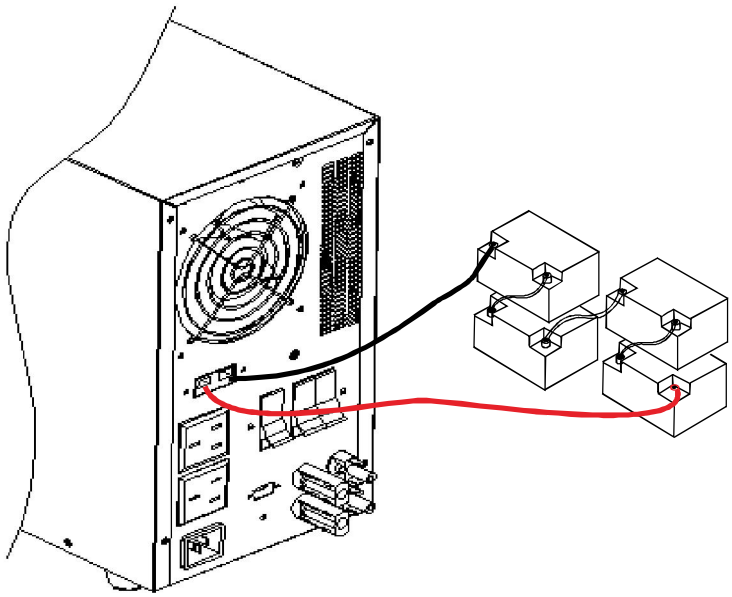
Output Connection -2



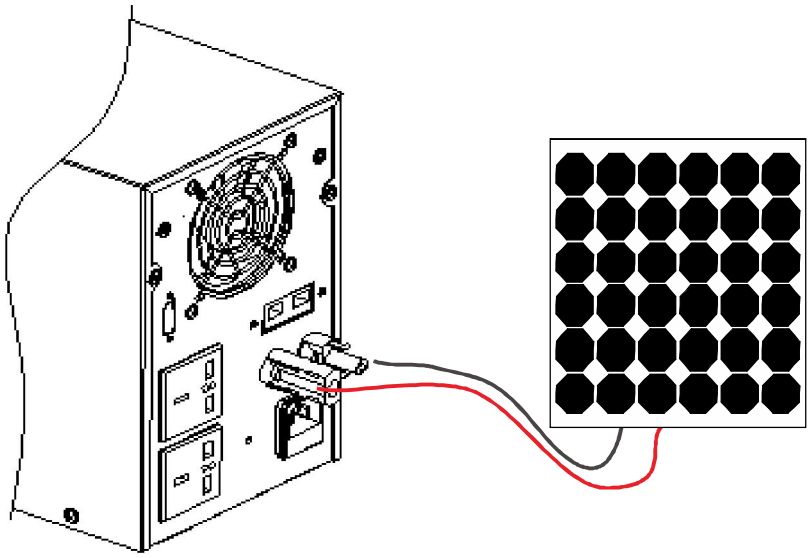
Battery Connection -1



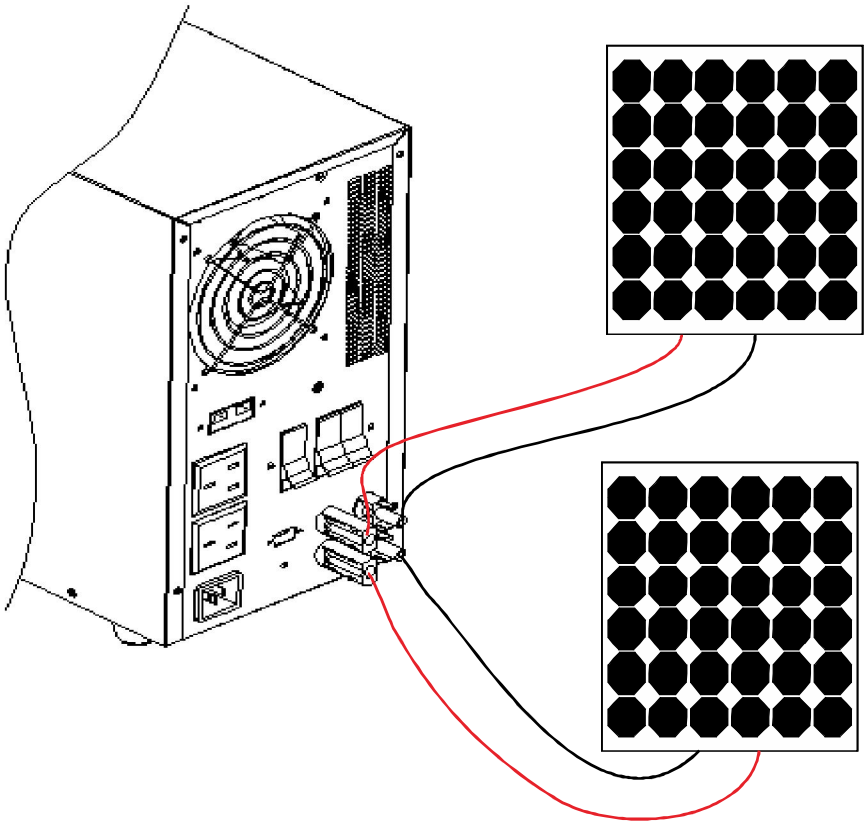
Battery Connection -2



Solar Panel Connection-1



Solar Panel Connection-2



Operation

Initial Operation

Comply with following points before turning on the equipment to supply the load:

- Ensure a ventilative space
- Ensure the earth wire well-connected
- Ensure all the switches and switch of the external battery are in the "OFF" position

Warning

- Once the equipment is connected with city power, its output terminals are all with electricity even not press key “ON” in the front.
- DO NOT connect any loads that make the equipment overloaded, especially the DC load, for example, hair drier and vacuum cleaner.

NOTE

If not follow the instruction strictly, it would lead to problem during power supply

Turn on Steps

▶ Turn the switch of the external battery to “ON”

▶ Press key “ON” on the front board

▶ Turn the switch of the city power to “ON”

▶ Wait for at lest 30s until the output voltage is stable

▶ Connect the equipment to the external loads one by one

Warning

If the equipment is overloaded, it will keep alarm, please take away some loads and then start again

Turn Off Steps

NOTE
The following steps will shut down all the loads

- Disconnect all the switches of the loads
- Press key “OFF” in the front board
- Turn the input switch to “OFF”
- Turn the external battery switch to “OFF”
- Ensure that every switch and breaker of the equipment is disconnected
- Ensure that every indicator light goes out, and the equipment has been shut down completely

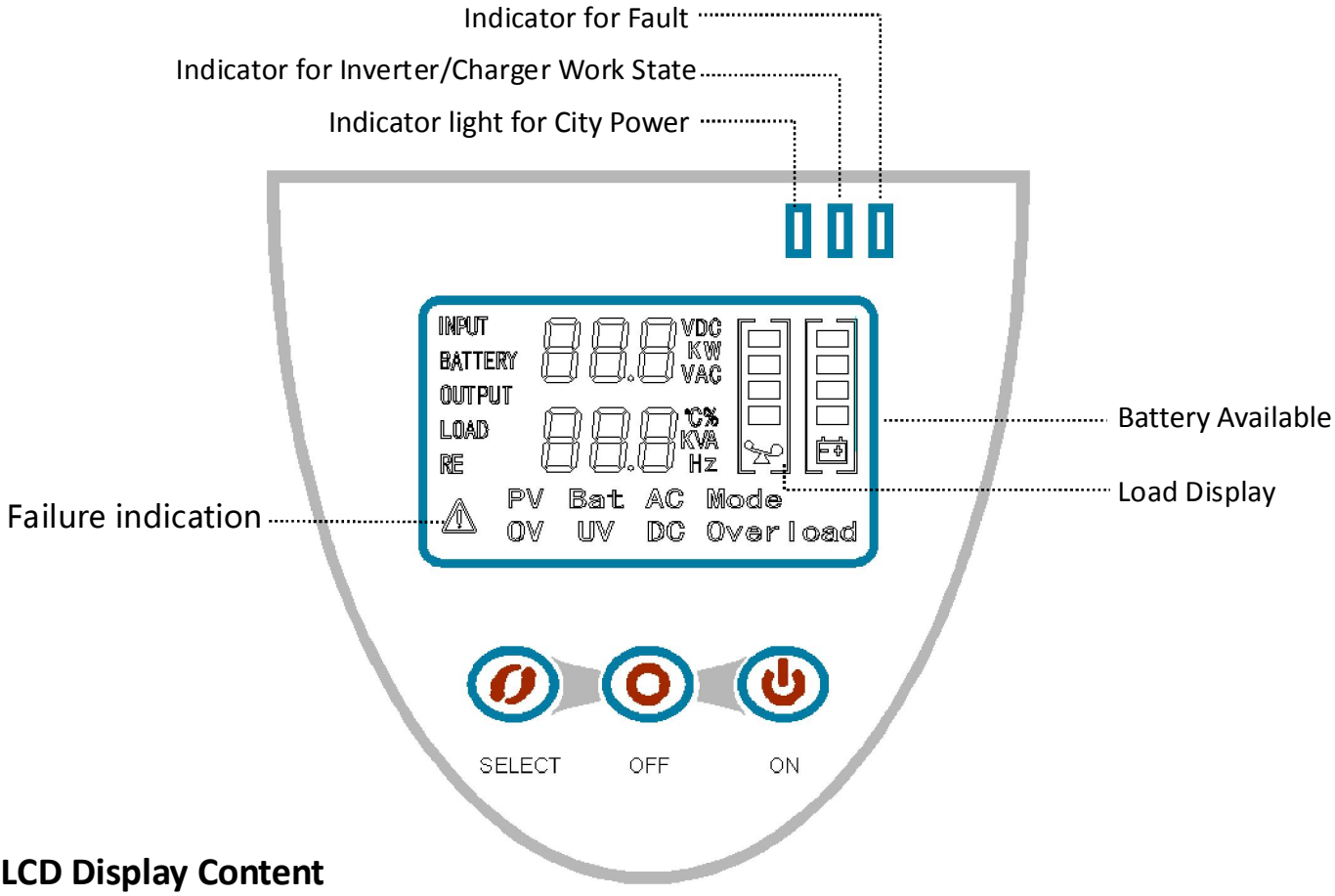
Funtion Test

NOTE

Power during the test may be NOT stable, please DO NOT connect primary loads to the equipment

While in test, break the city power to simulate interrupt, if the equipment runs normally and there is a alarm, NOT from the inverter, and sounds 4 times a minute while the battery discharges, and indicator light for city power goes out, it means the equipment is running by battery; If the alarm changes into one time per second, it means the battery is short of power and will automatically turn off. During emergency power supply, the load is powered by battery. Please NOTE that charging the battery before operating the equipment.

Display Content Instruction



LCD Display Content

INPUT: Voltage ; Frequency

BATTERY: Voltage ; Battery percentage

OUTPUT: Voltage ; Frequency

LOAD: Voltage ; Current

RE: PV Voltage ; Battery charging current

PV BAT Mode: PV mode

BAT Mode: Battery mode

AC Mode: City power mode

OV DC: Battery overvoltage

UV DC: Battery undervoltage

Over load : Over load

Maintenance

Battery Disposal

Battery in the equipment NO need the user to maintain. When the battery reaches the end of the service life, it MUST be replaced by customer service technician. The waste battery is poisonous and harmful and MUST be disposed by the recycling center approved by local law.

Usually, service life of the battery is about 3 years under ambient temperature 25℃, while at the same time, it is affected by the frequency of city power interrupt and duration.

NOTE

To ensure the good condition of battery, and on the premise that there is enough power of it, under common conditions, the battery should be periodic tested every 4~6 months. The test is to discharge the battery to the loads till shut down and then continuously charge the battery NOT less than 12 hours. Please NOTE that to avoid deep discharge and damage the battery, it MUST discharge with up to 50% load capacity.

Storage

For long-term storage, when the ambient temperature is ≤25℃, the battery MUST be charged every 4 months, and no less than 12 hours every time; when the ambient temperature is ≥25℃, the battery MUST be charged every 2 months, and no less than 12 hours every time;

Cleaning

- Press ON-OFF key to shut down the equipment and break the city power input
- Use dry or wet cleaning cloth to clean the surface

Warning

- DO NOT use cleaning mixture or corrosive solvent to clean the equipment
- DO NOT let the liquids flow into the equipment
- Ensure the venthole unobstructed

Communication

RS232 communication interface is available for UPS in the equipment, data exchange is achievable between device and PC. Request of it please contact local distributor.

RS232 Interface Instruction (Limit to UPS model ONLY)

RS232 communication interface is available, the user can monitor input power, state of the equipment and its running.

NOTE

Connection of the RS232 MUST adapt attached specialized cable

RS232 data

Baud Rate: 2400bps

Bits Length: 8bit

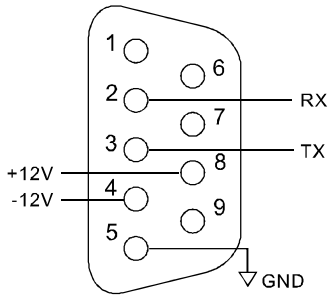
Cut-off: 1bit

Parity Bit: none

Following is the instruction for pin-out of **DB-9**

Pin-out	Instruction
2	Input
3	Output
4	-12V
5	Grounding
8	+12V

Sheet 3 RS232 pin-out instruction



RS232 Connection pore

Troubleshooting and Service

Please check the below items before contacting the customer service technician when there is problem for the equipment.

- If connection of the external battery is correct or NOT
- If there is city power input , its voltage and frequency matches our standard, or NOT
- If the input fuse has been damaged or the breaker has been shut down, or NOT
- Please provide below information when contact the customer service technician
- Equipment information: model, order No and serial No. on its back
- Detail of the problem, such as types of load, frequency of the problem, indicator light and alarm situation

Service

NOTE: if the equipment needs to repair, please follow the blew steps. Send it back to local agent if problem occurs again.

- ▶ For general problems, please take troubleshooting for reference
- ▶ If there is still problem, please contact the local agent
- Record the model, serial No. and date of purchase of the equipment and then contact the customer service technician for troubleshooting.
- During warranty, no-artificial damage is free for repair, if \NOT, repair charges.
- During the transportation, ensure it is well packed to avoid damage

NOTE: DO NOT use styrofoam pad for package. Damage during the transportation is NOT guaranteed, please effect whole insurance for the parcel.

Techngical specigfication

MODEL(XPI)	0.5K	0.7K	1.0K	1.5K	2.0K	3.0K	4.0K	5.0K	6.0K	7.0K
	XPI X.XKVA-DMS/DML/ DPS/DPL/UMS/UML/UPS/UPL									
BatteryVoltage(dc)	24V			48V			96V			
BatteryConfiguration	Insidemax.200AH*2pcs or External			Inside max. 200AH*4pcs or External			External			
OutputPower	350W	500W	700W	1.0KW	1.5KW	2.0KW	3.0KW	3.5KW	4.2KW	5.0KW
Solar Controller										
ChargerType	PWM/MPPT			MPPT						
RatedPVInputPower	720/1200W			2400W			4800W			
PVInputVoltageRange	30-50/30-90Vdc			70-150Vdc			150-300Vdc			
MaxSolarCharge Current	30A/50A			50A						
FloatChargeVoltage	27.2Vdc			54.5Vdc			109Vdc			
EqualizationCharge Voltage	28.8Vdc			57.6Vdc			115.2Vdc			
AC Input										
ACInputVoltage	175-270Vac(50Hz)/90-135Vac(60Hz)									
ACInputFrequency	50/60Hz±3%									
ChargingCurrent	Standard:10A Max.:15A									
AC Output										
ACOutputVoltage	110/120/127Vac±3%; 220/230Vac±3%									
AC Output Frequency	50/60Hz±1%									
Crest Factor	3:1									
Output Wave	Pure Sine Wave									
Efficiency	>80.0%		>85.0%							
System										
Display	LED/LCD									
Information	PV Status, Battery Capacity, AC Input Voltage, AC Output Voltage, Load									
Protections	Overload, Low Voltage, SPD,Overtemperature,shortcircuit etc									
Overload Capability	100-120% 30s; 120-150% 10S; >150% 5s; short circuit, 10ms									
Cooling	Fan Cooling									
Communication	RS232									
Noise	< 60dB									
Operation Temperature	0-40°C									
Storage Temperature	-15~+50°C									
Humidity	0-90%									
Altitude	0-3000m(Above 1000m, derated power 1% per 100m)									
Storage Altitude	0-15000m									
Dimension (W×D×H mm)Bat. In/Out	365*572*980/ 385*145*209			615*572*980/ 385*165*209	615*572*980/ 580*260*410		645*315*550			
Weight (Kg)Bat. In/Out	148/8	149/9	150/10	281/11	289/19	291/22	29	30	35	35
Specification is subject to change without prior notice.										