

ETS-B (10- 60KVA)

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1、 About this chapter

1.1 Foreword

Thank you for purchasing the off grid inverter from our company. We hope that the device will meet your satisfaction when you use it with your PV system.

1.2 Target group

The manual is aimed at technical personnel who are responsible for inverter operation and maintenance. Readers should equip with certain electrical knowledge and familiar with electrical principles and electrical components.




1.3 Validity

This manual applies to the following inverters:

- ETS-B-10KVA/15KVA/20KVA/30KVA/40KVA

1.4 Safety

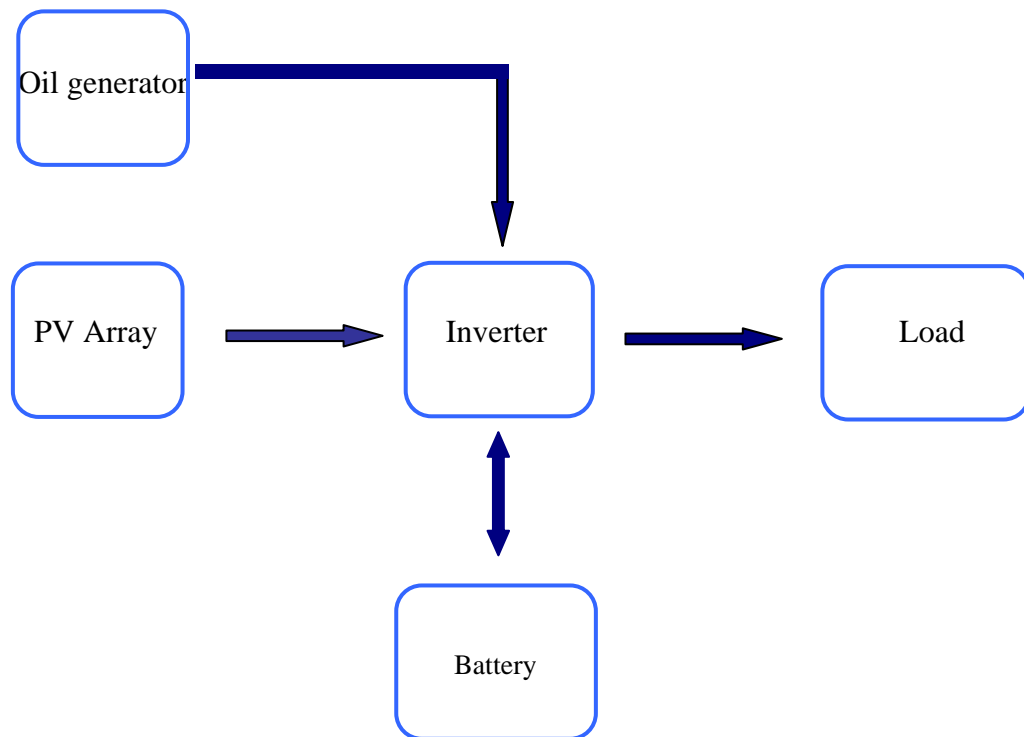
Read this manual and other related documents carefully before any work on the inverter. Documents must be stored carefully and available at all times.

| Parameter | Explanations |
|---|--|
|  DANGER | DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury. |
|  NOTICE | NOTICE indicates a situation which, if not avoided, could result in equipment or property damage. |
|  NOTE | NOTE indicates additional information, emphasized contents or tETS-B to help you solve problems or save time. |

2、 Intended usage

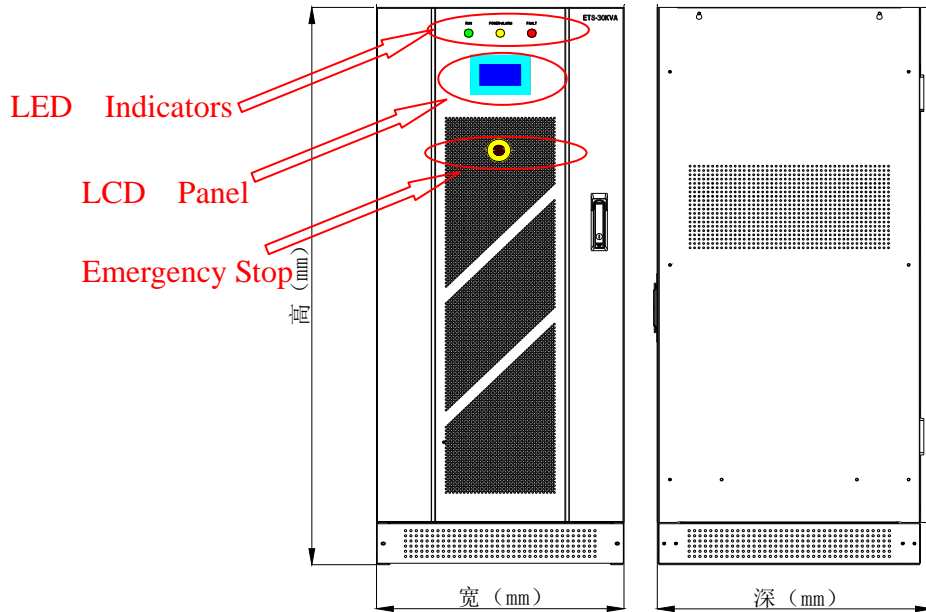
2.1 Off grid PV system

An inverter is core equipment in a off grid PV system. It converts the DC voltage from PV arrays to AC voltage, and then feeds the AC voltage to load. An example about intended usage of the inverter is shown below.



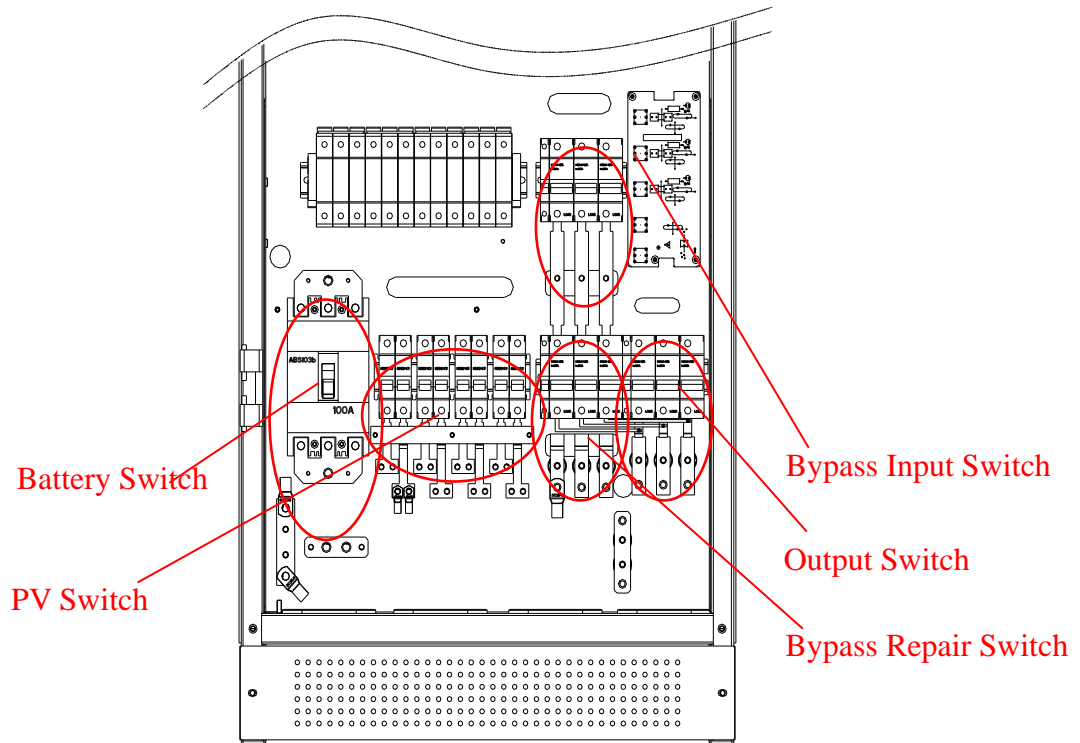
Off grid PV system

2.2 Product Appearance



Dimension of the Inverter

| | ETS-B-10KV A | ETS-B-15KVA | ETS-B-20KVA | ETS-B-30K VA |
|---------------------------|------------------------|------------------------|------------------------|------------------------|
| Dimensi ons(W× D×H) | 550mm*600m m*1300mm | 550mm*600mm*1 300mm | 550mm*600mm* 1300mm | 550mm*600m m*1440mm |
| Weight | 250Kg | 280Kg | 320Kg | 450Kg |
| | ETS-B-40K VA | ETS-B-50KVA | ETS-B-60KVA | |
| Dimensi ons(W× D×H) | 550mm*600m m*1300mm | 610mm*600mm*1 450mm | 610mm*600mm* 1450mm | |
| Weight | 400Kg | 450Kg | 450Kg | |



● LED Indicators

| Item | Color | Remarks |
|-------------|--------|---|
| OPERATION | Green | Show the run mode The LED will be on in run mode |
| POWER/ALARM | Yellow | Show the circuit power supply and warning. The LED will be on after power supply. The LED will be shining when a warning occurs and has not been removed. The LED will be on when the warning is cleared |
| FAULT | Red | Show the fault. The LED will be on when a fault occurs and has not been removed. The LED will be off when the fault is cleared. |

● **LCD Screen**

LCD screen displays the operational information of the inverter and performs many functions as follows:

- Start or stop the inverter
- Display real-time operating data
- Display fault records
- Adjust the running parameters
- View and clear historical records

● **Emergency Stop Button**

The inverter will Stop when press down the emergency stop button.



Emergency stop button used under the special state ,before restarting the inverter you need to clear the alarm which shown in chapter 6.

● **Battery Switch**

The Battery Switch is the primary disconnection device of the Inverter and battery. controlling the battery circuit..

● **PV Input Switch**

The PV Switch is the primary disconnection device of the PV Arrays and Inverter. controlling the PV input circuit..

● **Bypass Input Switch**

The Bypass Input Switch is the primary disconnection device of the Oil Generator and Inverter.

● **Bypass Repair Switch**

If the Inverter can't work in the right way ,But we still need the Power supply. You need to push

the Bypass repair Switch to the state “ON” and push all the other switch to the state “OFF”



NOTE

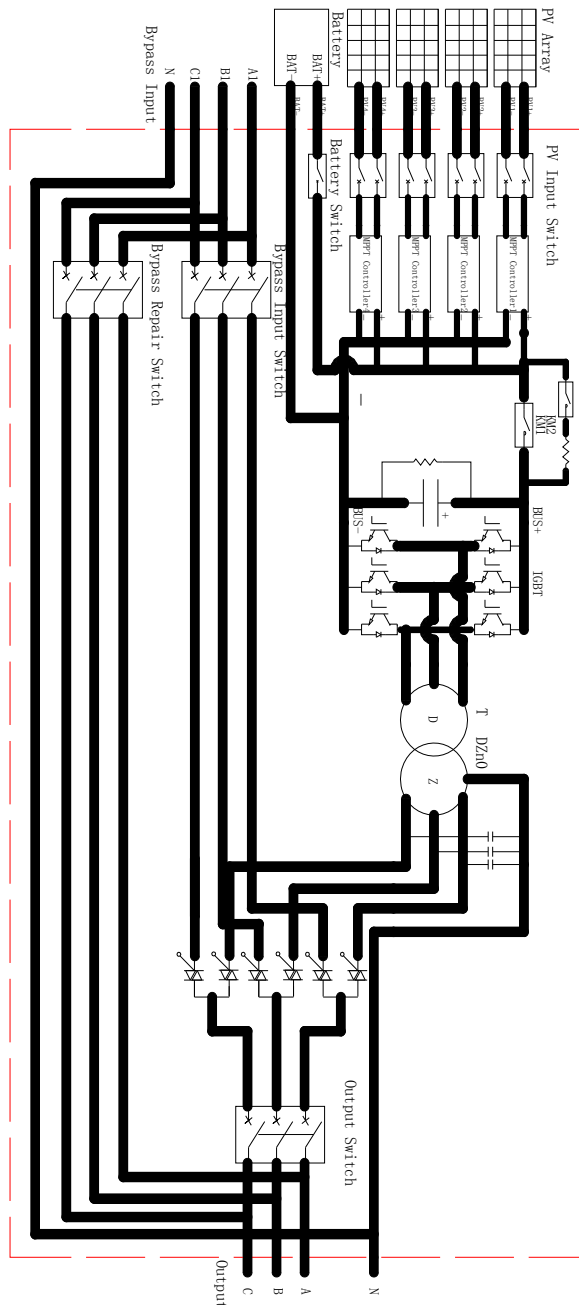
- When the inverter is working under the inverter working mode, the Bypass repair Switch must be in the state of “OFF”.
 - When the inverter need to be repaired , All the switch except the Bypass repair switch must be in the state of “OFF”.
-

● **Output Switch**

The output switch is another primary disconnection device of the inverter. controlling the AC main circuit. Inverter can feed load normally only when the output switch is in the “ON” position.

2.3 Main circuit

PV array transforms the sun-radiated energy into electrical energy in the form of direct current. In order to utilize this energy and feed it to the battery and the load, this energy shall be turned into alternating current inside the inverter.



3、 Operation Modes

3.1 Start the Inverter



- Users need to set the battery capacity following the chapter 6 before you start the Inverter at the first time you use the inverter, If the battery capacity is changed ,the battery capacity should be reset following the chapter 6.
 - Ensure that nobody is working on the inverter
 - Ensure that all cables are connected correct
-

To start the inverter :

- 1、 Ensure that all cables are connected correctly
 - 2、 Push the Bypass repair switch to “OFF” position
 - 3、 Push the Output switch to “ON” position
 - 4、 Push the Battery switch to “ON” position
 - 5、 Push the PV input switch to “ON” position
 - 6、 If everything is ok the inverter will run automatically
-



When using the inductive machine like ”air condition” .“electric fan “and other electric machine.make sure to start those machine one by one .else our inverter may restart for the reason of over load .

3.2 Stop the Inverter

To stop the inverter:

- 1、 Stop the inverter through the LCD panel
- 2、 Push the output switch to “off” position
- 3、 Push the battery switch to “off” position
- 4、 Push the PV input switch to “off” position

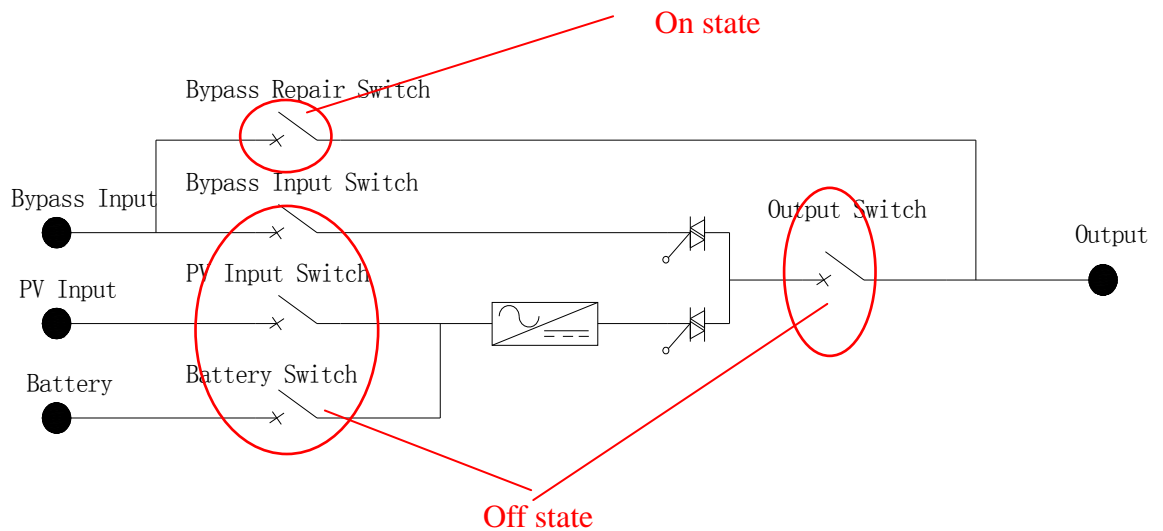
- 5、 Push the Bypass input switch to “off” position
- 6、 Push the Bypass repair switch to “off” position

3.3 Bypass repair switch

Equipment failure requiring repair, while ensuring that the diesel engine to supply power to the load through bypass, users need to use the bypass repair switch, The bypass repair switch is on and other switch must be off.

To use the bypass repair switch:

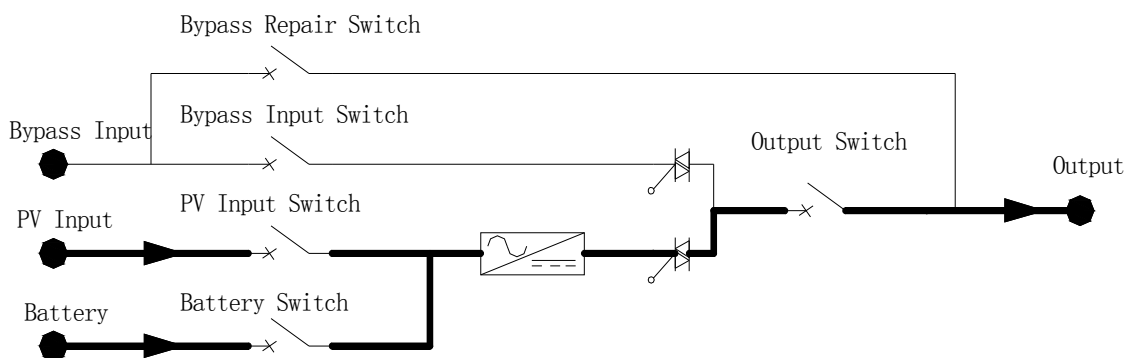
- 1、 Stop the inverter through the LCD panel
- 2、 Push the output switch to “off” position
- 3、 Push the battery switch to “off” position
- 4、 Push the PV input switch to “off” position
- 5、 Push the Bypass input switch to “off” position
- 6、 Push the Bypass repair switch to “on” position



3.4 Running mode

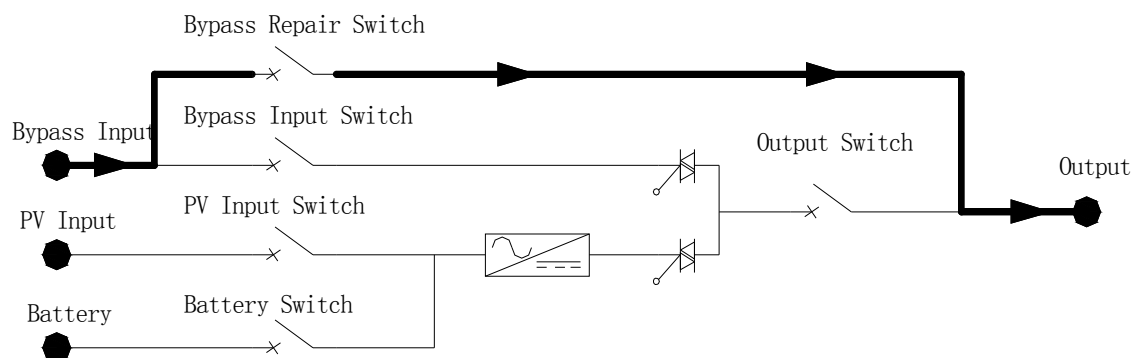
- The inverter is working

Under the “inverter working mode”, the device is an inverter, the output provided by the PV array and the battery only when the battery power is insufficient or inverter failure occurs, switching to the bypass mode and the normal mode is given priority status.



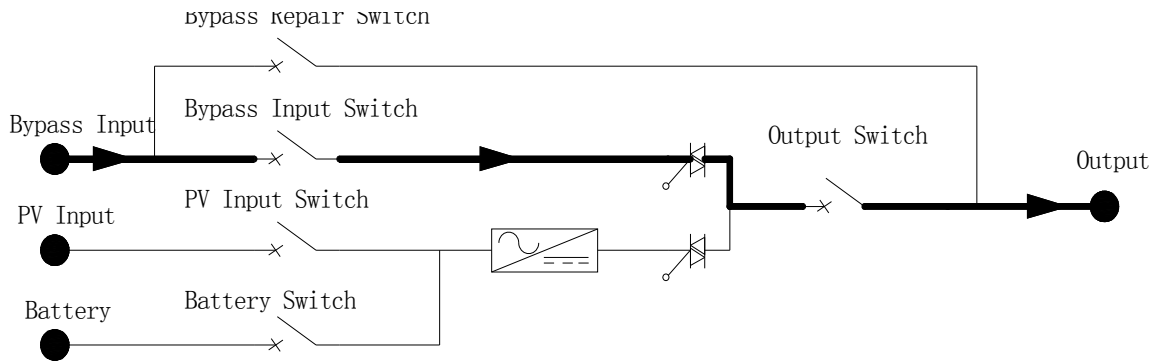
- Bypass repair mode

Equipment failure requiring repair, while ensuring that the diesel engine to supply power to the load through bypass, users need to use the bypass repair switch, The bypass repair switch is on and other switch must be off.



- Bypass working mode

Bypass priority mode, As the bypass engine in the normal state, the device automatically switches to bypass mode, the output power is provided by diesel engines, diesel-powered priority. The device switch to inverter status when the engine fails, the output provided by the batteries and solar arrays



4、 Mechanical Installation

 NOTE

The inverter should be transported or installed as an integrated unit. Never disassemble it without the permission of us.

 NOTE

Only professional electricians can perform the operations described in this chapter.

 NOTE

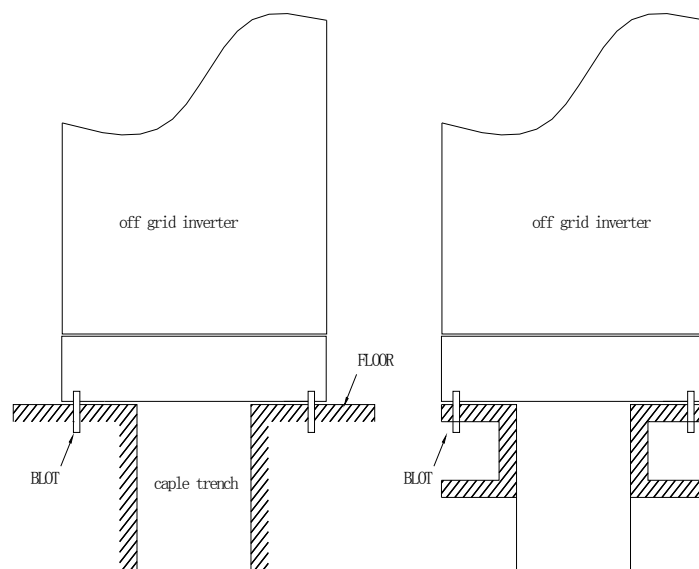
Before installation and maintenance, make sure that both DC and AC side are voltage-free.

4.1 Fastening the Inverter to the floor

 NOTE

The inverter must be fastened to the floor as follows:

Fasten the cabinet to the channel steels or floor using M12 bolts and nuts

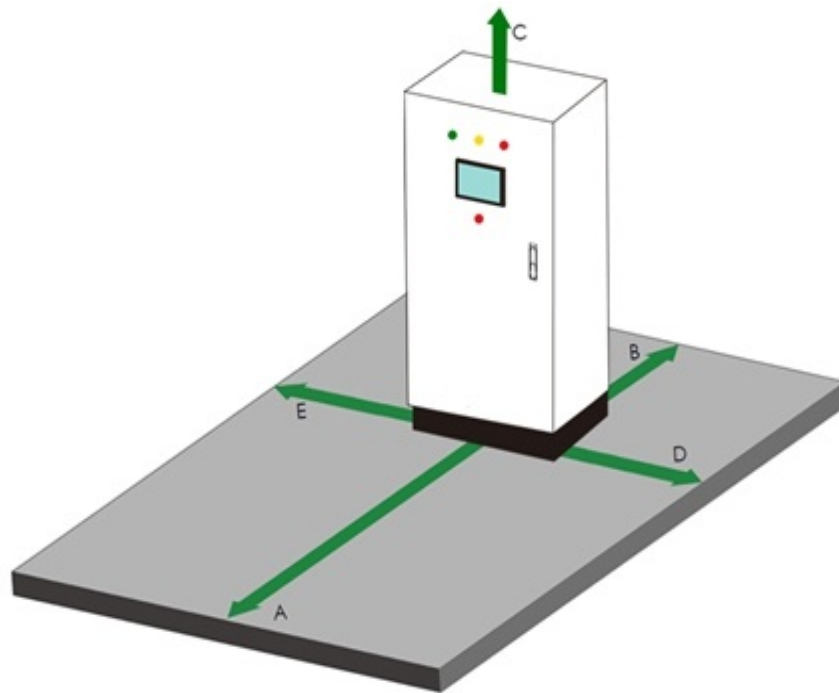


Fastening the Inverter

4.2 Clearance Space

The minimum clearance space around the inverter shown below should be maintained for service operation, ventilation and escape route.

The space illustrated in this section is the minimum values. More space is recommended for better ventilation and higher conversion efficiency of the inverter.



Clearance Space around the Inverter

| TYPE | A | B | C | D | E |
|-----------------|--------|--------|-------|-------|-------|
| ETS-B-30KV A | 1000mm | 1000mm | 600mm | 600mm | 600mm |
| ETS-B-40KV A | 1000mm | 1000mm | 600mm | 600mm | 600mm |

5、 Electrical Connections

 NOTE

Before installation and maintenance, make sure that both DC and AC side are voltage-free

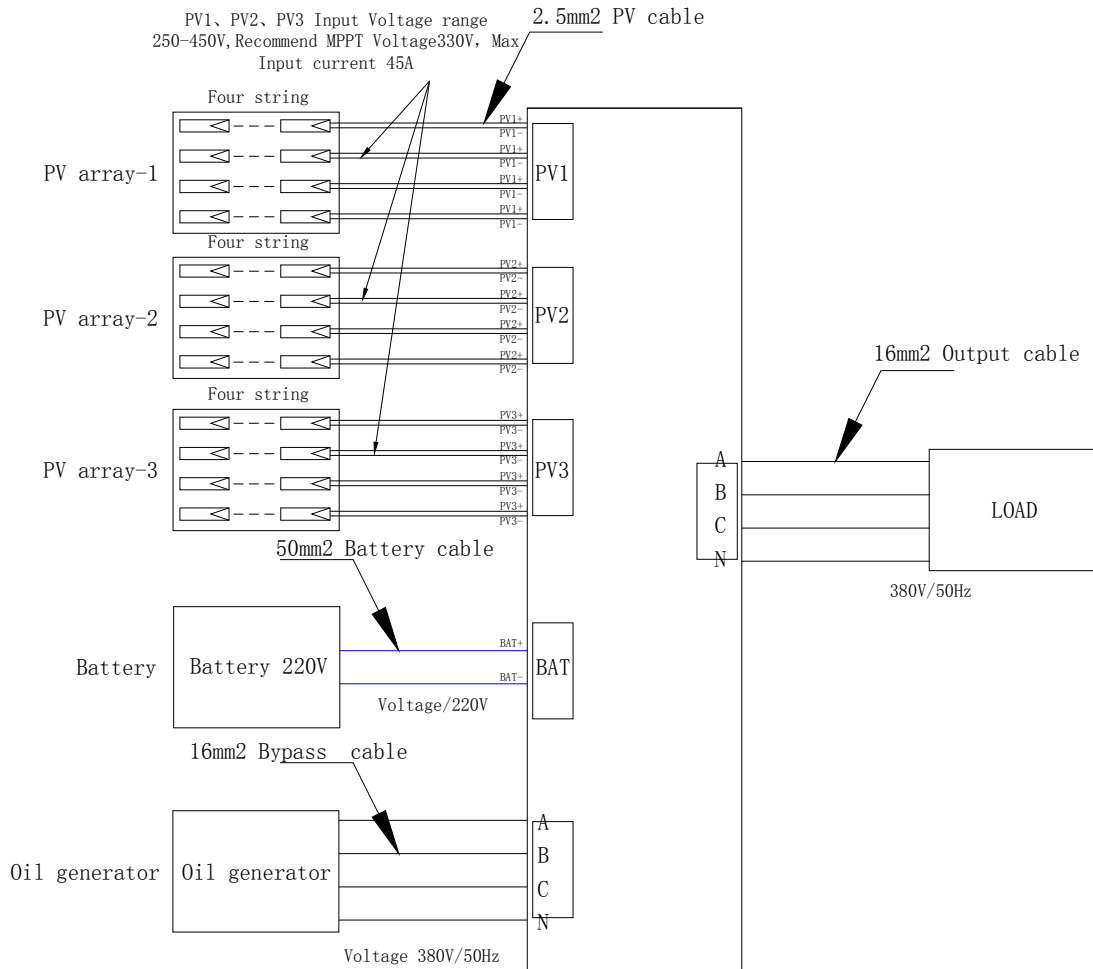
 NOTE

Never put flammable materials in the vicinity of the inverter

 NOTE

Only professional electricians can perform the operations described in this chapter

5.1 Cable Specifications

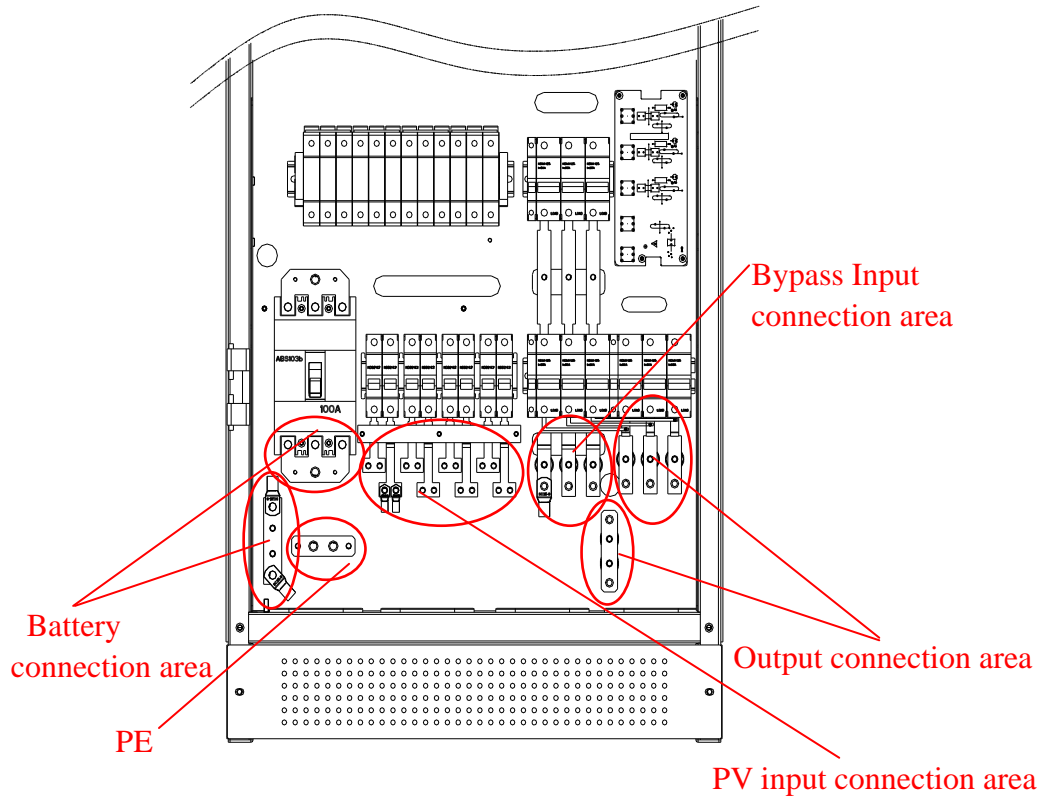


Cables Recommended Sizes

 NOTE

- Cable sizes in this section are only for copper cables. If aluminum cables are used on site, please choose cable cross sections appropriately.
- Cable sizes in this section apply to the standard configuration of the inverter. Should you have any specific requirements, please inform us.

5.2 Electrical Connections Interface



Electrical Connections Interfaces of the Inverte

| | |
|------------------------------|----------------------------------|
| | |
| Battery connection area | Connect to the battery |
| PV input connection area | Connect to the PV array |
| Output connection area | Connect to the load |
| Bypass Input connection area | Connect to the Oil Generator |
| PE connection area | Connect to the protection ground |

5.3 Cable Connection

5.3.1 Tightening Torques for Power Cable Connections

Tighten the cable with the proper torque shown below to prevent the loosening of cable lugs that may cause poor contact, high contact resistance or even fire.

| | | | | |
|-------------|-------|---------|-------|---------|
| Screw size | M3 | M4 | M5 | M6 |
| Torque(N·m) | 0.7-1 | 1.8-2.4 | 4-4.8 | 7-8 |
| Screw size | M8 | M10 | M12 | M16 |
| Torque(N·m) | 17-20 | 34-40 | 60-70 | 120-140 |

5.3.2 PV input Connection

Markings on the Device:

| | |
|------------|---------------------------|
| (positive) | PV1+ 、 PV2+ 、 PV3+ 、 PV4+ |
| (Negative) | PV1- 、 PV2- 、 PV3- 、 PV4- |



- Be careful not to connect the wrong PV array input polarity.
 - The voltage of the PV array must never exceed the maximum permissible inverter input voltage.
-

5.3.3 Battery Connection

Markings on the Device:

| | |
|------------|------|
| (positive) | BAT+ |
| (Negative) | BAT- |

 **NOTICE**

- Be careful not to connect the wrong Battery input polarity.
 - The voltage of the battery must never exceed the maximum permissible inverter input voltage.
-

5.3.4 Output Connection

Markings on the Device:

| | |
|---------|---|
| Phase-A | A |
| Phase-B | B |
| Phase-C | C |
| Phase-N | N |

 **NOTICE**

- Be careful not to connect the wrong AC output polarity
 - The voltage of the DC must never exceed the maximum permissible inverter input voltage
-

5.3.5 Bypass Input Connection

Markings on the Device:

| | |
|---------|----|
| Phase-A | A1 |
| Phase-B | B1 |
| Phase-C | C1 |
| Phase-N | N |

 **NOTICE**

- Be careful not to connect the wrong AC output polarity
 - The voltage of the DC must never exceed the maximum permissible inverter input voltage
-

5.3.6 Ground Connection

Markings on the Device:

| | |
|------------------------|----|
| Ground connection area | PE |
|------------------------|----|

5.3.7 Signal output Connection

Markings on the Device:

| | |
|------------------------|---------------|
| Signal connection area | Signal Output |
|------------------------|---------------|

- When the Bus voltage of the inverter is low, the Signal Output will send out a signal“Opened”, or the Signal Output will send out a Signal“closed”.

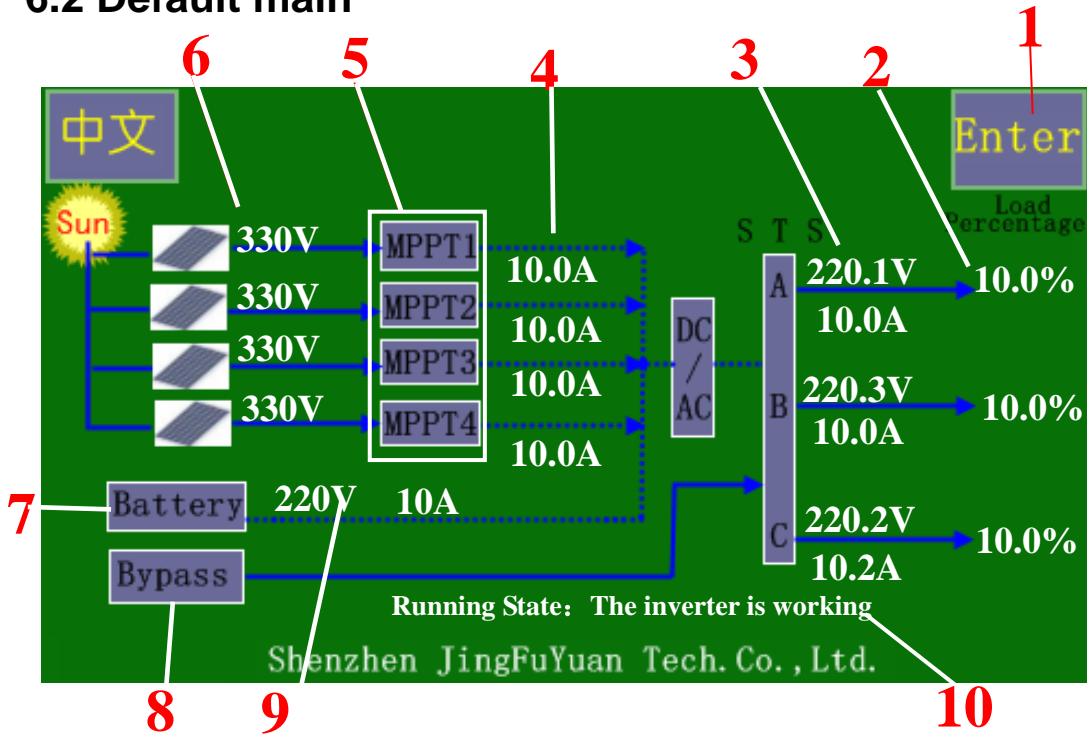
6、 LCD Menu Operation

6.1 Overview of Submenu and Icon

This chapter introduces the detailed information and operation about inverter LCD control Menu.

| Main Menu | First sub-menu | Second sub-menu | function |
|-----------|--------------------|-----------------------|---------------------|
| main | | | |
| menu | System Control | System on off | Turn On Inverter |
| | | | Turn Off Inverter |
| | | | Turn On MPPT |
| | | | Turn Off MPPT |
| | | | Recover Factory Set |
| | | Adjust MPPT | |
| | | Delete Inverter Error | |
| | Inverter Work Mode | | |
| | Alarm Data | Inverter Alarm | Alarm/Fault |
| | | MPPT Alarm | |
| | | System Alarm | |
| | | Communication | |
| | | History Records | |
| | Time Set | System Time Set | |
| | System Data | Inverter Data | |
| | | MPPT Data | |
| | | Dynamoelectric Data | |
| | Parameter set | Parameter Set | |
| | BMS | Charging Mode | |
| | | Parameter Set | |

6.2 Default main



NOTE

LCD panel contains lots of parameters pertinent to the inverter operation. All parameter configurations must be done by appointed personnel. Do not modify any parameters before you fully understand this manual or consult the staff from JinFu Yuan

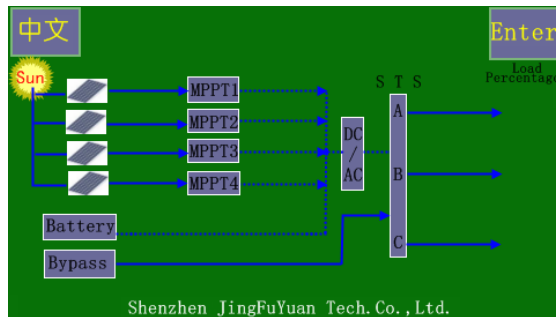
- 1、 TAP “Enter” into “Solar Monitoring System” to the main menu
- 2、 Show the load ratio
- 3、 Show the output voltage and current
- 4、 Show the MPPT output voltage and current
- 5、 Tap MPPT into the menu to check the running data of the MPPT
- 6、 Show the voltage of the PV array
- 7、 Tap Battery into the menu to check the running data of the Battery
- 8、 Tap Bypass into the menu to check the running data of the Battery
- 9、 Show the charging voltage and current of the Battery
- 10、 Show the running state of the Inverter

6.3 Start / Stop

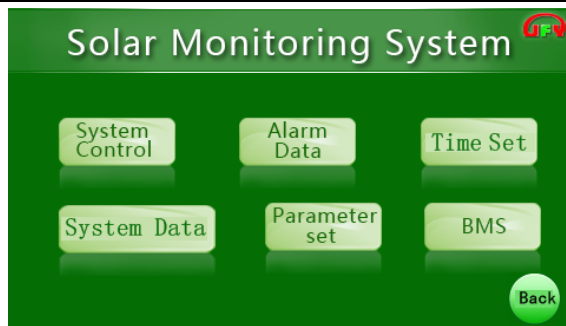
NOTICE

The inverter run in two mode “auto”and “manual”, we set the inverter through the chapter “running mode” shows below.

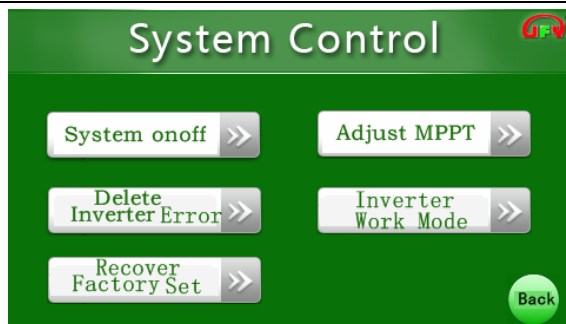
- Under the “auto “mode ,the inverter will start and stop without manual control.
- Under the “manual “mode ,the inverter will start and stop with manual control,users can start/stop the inverter by following way.



1、 Tap “Enter” in the Solar Monitoring System menu



2、 Tap “System Control” into the sub-menu

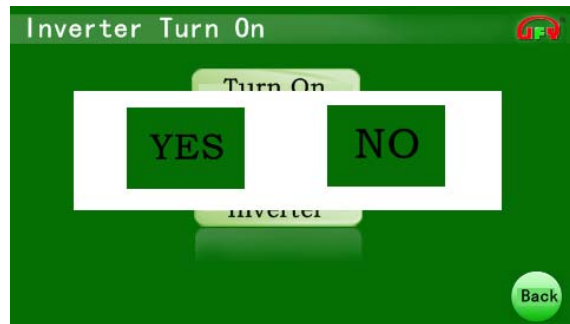


3、 Tap “System on off” into the sub-menu

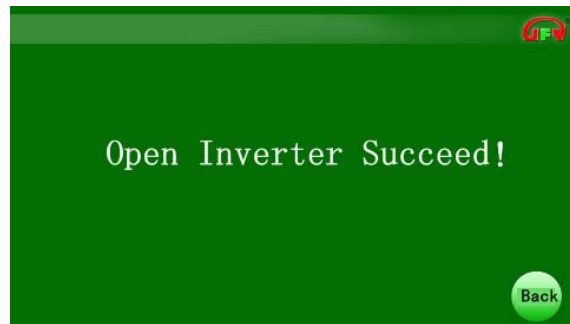
Off Grid Inverter Users' Manual



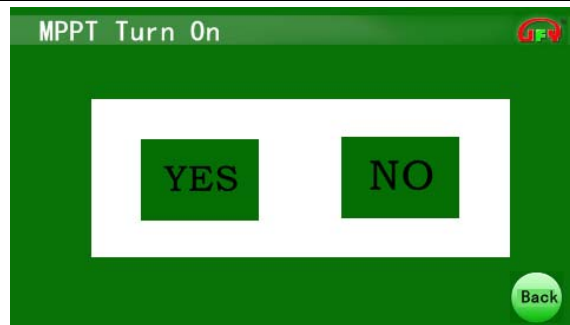
4、 Tap “Turn On Inverter” to start the inverter



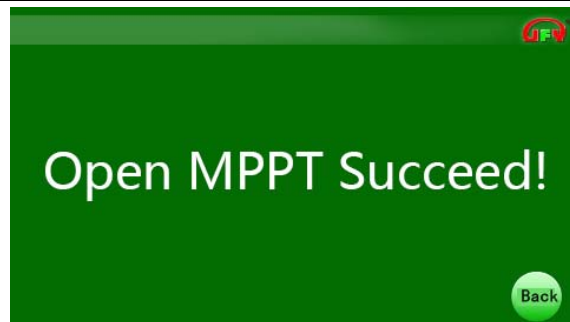
5、 Tap “YES” to confirm the operation



6、 The inverter open Succeed !



7、 Tap “Turn On MPPT” to start the MPPT

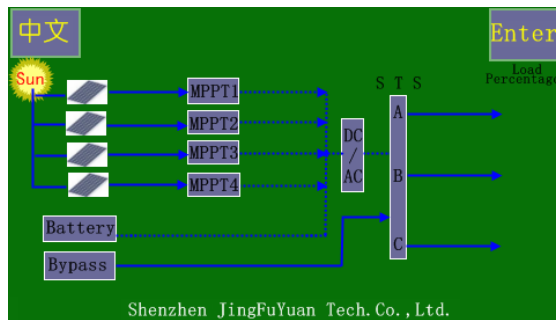


8、 The MPPT open Succeed !

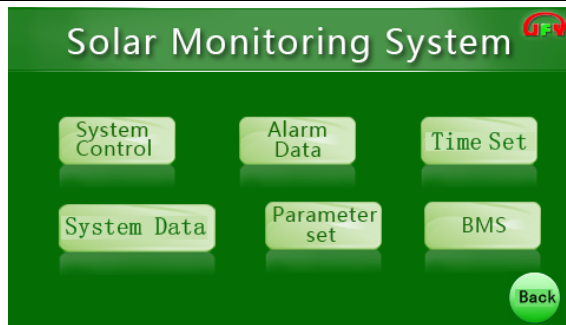
6.4 Delete Inverter Error

NOTE

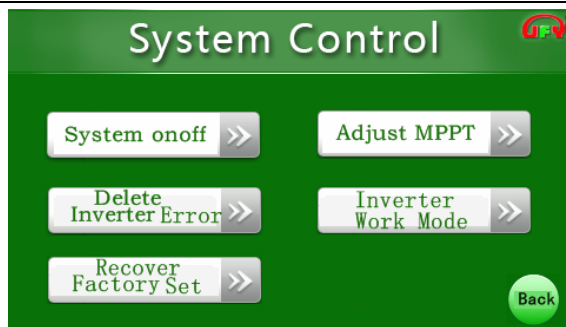
When a Error happen, the red led will be on ,Users can clear the Error through this chapter



1、 Tap “Enter” in the Solar Monitoring System menu



2、 Tap “System Control” into the sub-menu



3、 Tap “Delete Inverter Error” to delete the Inverter Error



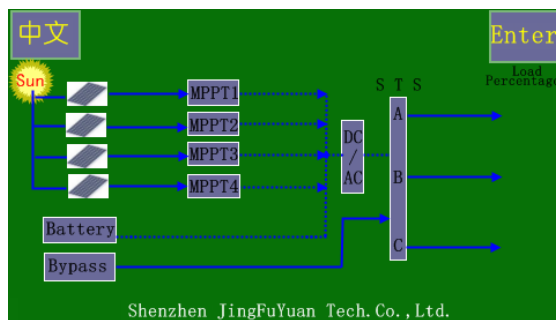
4、 Delete Inverter Error Succeed !

6.5 Running Mode

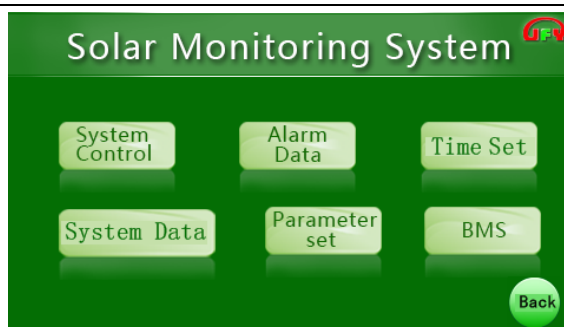
NOTE

The inverter run in “auto mode” and “manual mode”, The “auto mode” is the default mode. “normal mode” and “ECO mode”, The “normal mode” is the default mode.

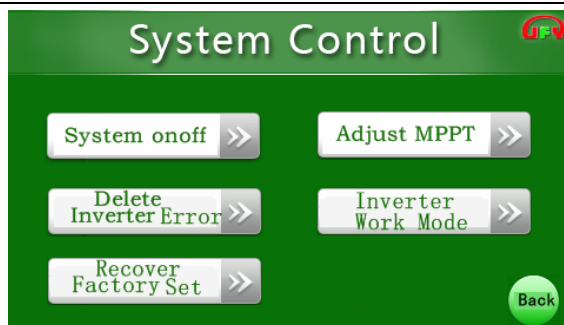
- Under the “auto mode”, The inverter will automatically start and stop without manual control
- Under the “manual mode”, The inverter needs to manually start .
- Under the “normal mode”, the device is an inverter, the output provided by the PV array and the battery only when the battery power is insufficient or inverter failure occurs, switching to the bypass mode and the normal mode is given priority status.
- Under the “ECO mode”, Bypass priority mode, As the bypass engine in the normal state, the device automatically switches to bypass mode, the output power is provided by diesel engines, diesel-powered priority. The device switch to inverter status when the engine fails, the output provided by the batteries and solar arrays



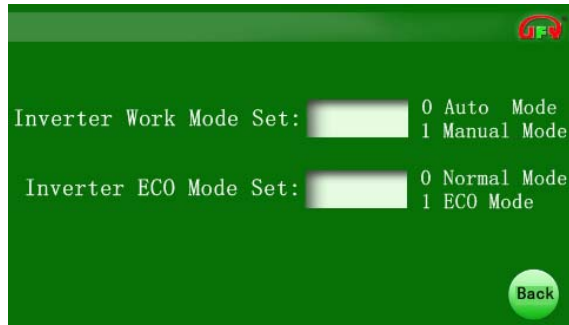
1、 Tap “Enter” in the Solar Monitoring System menu



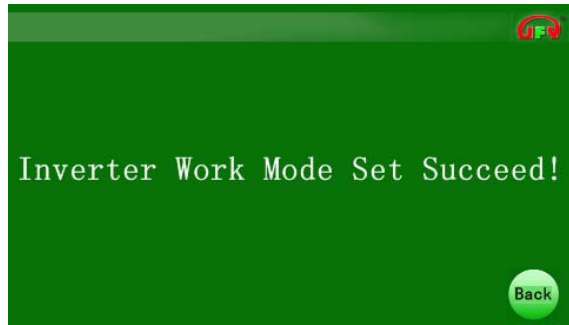
2、 Tap “System Control” into the sub-menu



3、 Tap “Inverter Work Mode” into the sub-menu



4、 Entering “1” or “0” to chose the Work Mode



5、 Inverter Work Mode set Succeed !

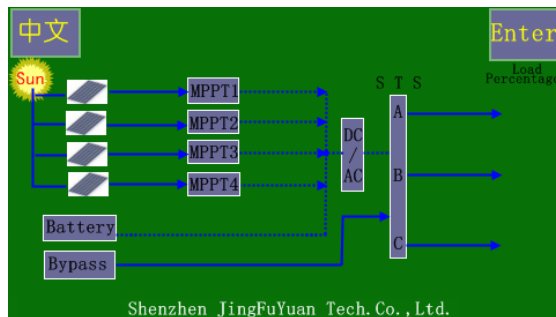
6.6 Alarm Data



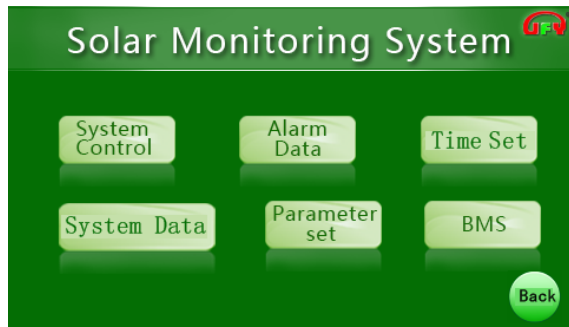
User can check the Alarm Data by following way.

- “History Records ”shows all the alarm data happened
- “Inverter Alarm”shows the present alarm data of the inverter part
- “Communication ”shows the communication alarm data
- “Breaker state ”shows the on or off of the switch

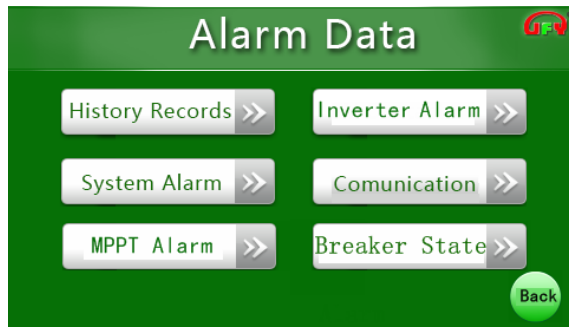
When the alarm happened, the red led will be on ,Users can clear the alarm through the chapter “ Delete Inverter Error”.



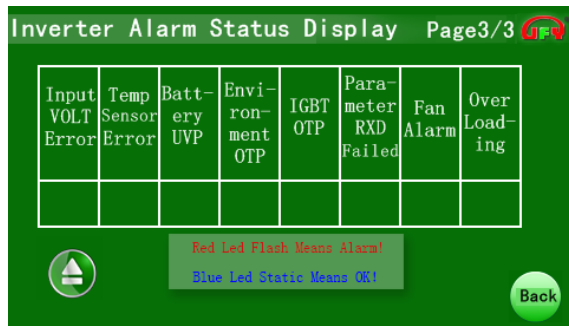
1、 Tap “Enter” in the Solar Monitoring System menu



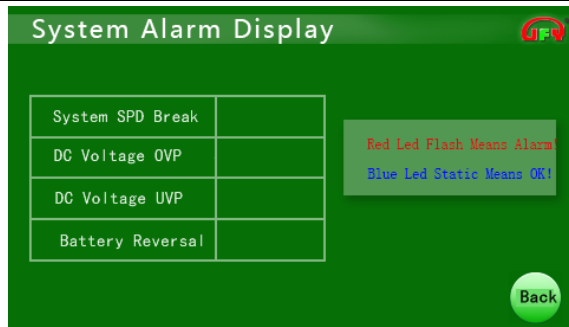
2、 Tap “Alarm Data” into the sub-menu



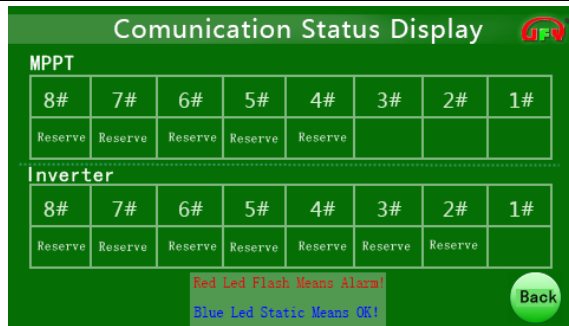
3、 Tap the button on the left to check the alarm Data



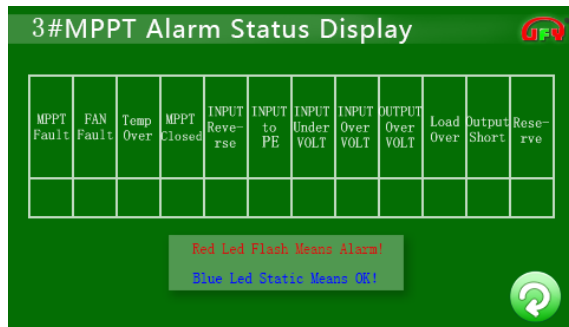
4、 Inverter Alarm Status Display



5、 System Alarm Status Display



6、 Communication Status Display



7、MPPT Alarm Status Display

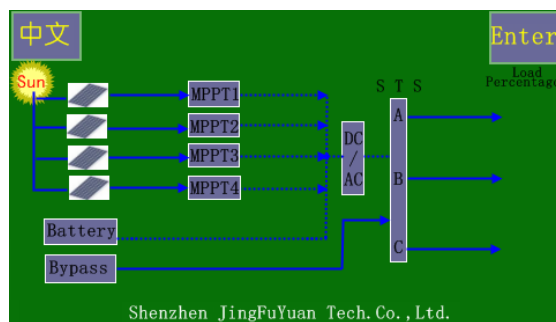


8、History Records

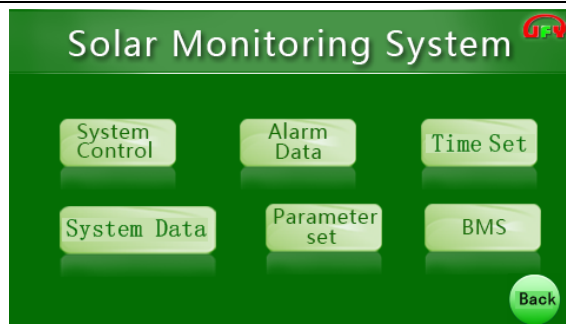
6.7 Time set



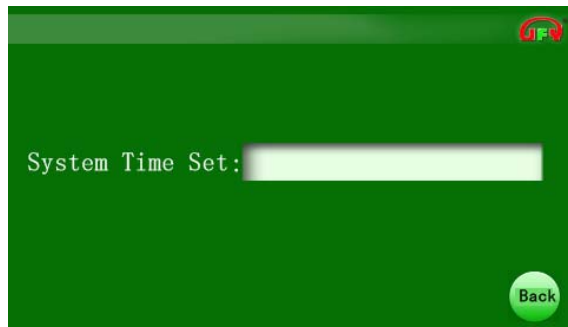
Users can adjust the system time by following way



1、Tap “Enter” in the Solar Monitoring System menu



2、Tap “Time set” into the sub-menu

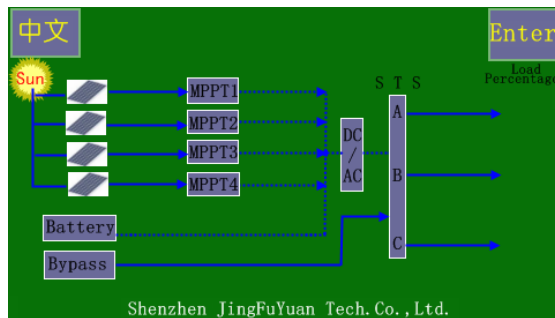


3、 Enter in the right time in the form

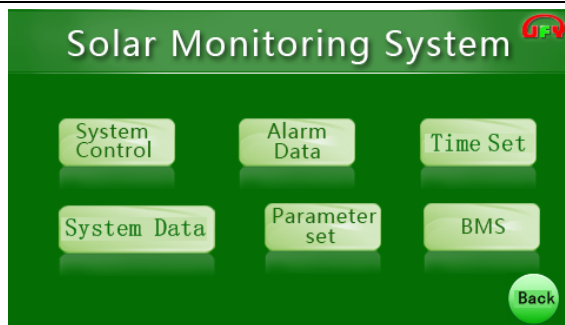
6.8 System Data



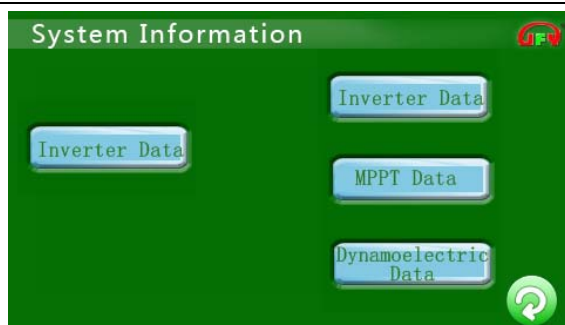
Users can check the running Data of the inverter : “MPPT Data” “Inverter Data” “Dynamoelectric Data”



1、 Tap “Enter” in the Solar Monitoring System menu



2、 Tap “System Data” into the sub-menu



3、 Tap “Inverter Data”
“MPPT Data”
“Dynamoelectric Data”
To check the running information

Inverter Operation data information

| Operation data | Phase A | Phase B | Phase C | Software Version | |
|----------------------|---------|---------|---------|------------------|----|
| Output Voltage (V) | | | | Output Frequency | Hz |
| Output Current (A) | | | | DC Voltage | V |
| Apparent Power (KVA) | | | | Input Current | A |
| Active Power (Kw) | | | | | |
| Load Percentage (%) | | | | | |
| Power Factor | | | | | |

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4、 Inverter Operation data information

MPPT Data

1#MPPT >>

2#MPPT >>

3#MPPT >>

Over The Past 31 Days Max PV Voltage Data

[Refresh](#)

5、 MPPT Data

Energy Generation Data

| | | | |
|-------------------------|-----|-----|----|
| Output Power | Kw | | |
| Amount In Today's Power | Kwh | wh | |
| Amount In This Month | Kwh | wh | |
| Total Power Generation | Mwh | Kwh | wh |

Over the Past 12 Months Power Data

Over the Past 31 Days Power Data

[Refresh](#)

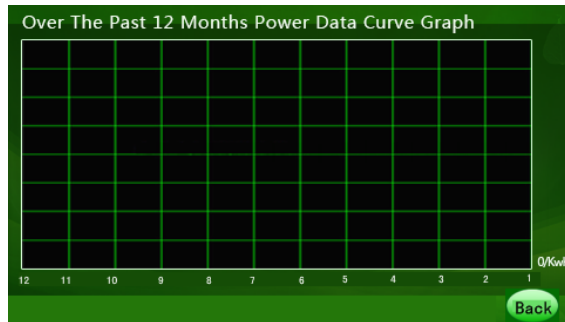
6、 Energy Generation Data

Over The Past 12 Months Power Data

| | | | |
|--------|-----|--------|-----|
| Num 01 | Kwh | Num 07 | Kwh |
| Num 02 | Kwh | Num 08 | Kwh |
| Num 03 | Kwh | Num 09 | Kwh |
| Num 04 | Kwh | Num 10 | Kwh |
| Num 05 | Kwh | Num 11 | Kwh |
| Num 06 | Kwh | Num 12 | Kwh |

[Read Curve Graph](#)
[Back](#)

7、 Over The Past 12 Months Power Data



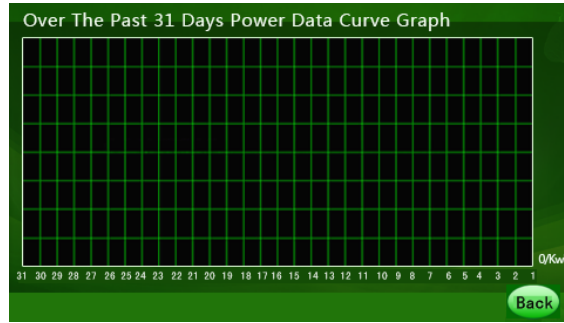
9、 Over The Past 12 Months Power Data curve Graph

Over The Past 31 Days Power Data

| | | | |
|--------|-----|--------|-----|
| Num 01 | Kwh | Num 07 | Kwh |
| Num 02 | Kwh | Num 08 | Kwh |
| Num 03 | Kwh | Num 09 | Kwh |
| Num 04 | Kwh | Num 10 | Kwh |
| Num 05 | Kwh | Num 11 | Kwh |
| Num 06 | Kwh | Num 12 | Kwh |

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10、Over The Past 31 Days Power Data

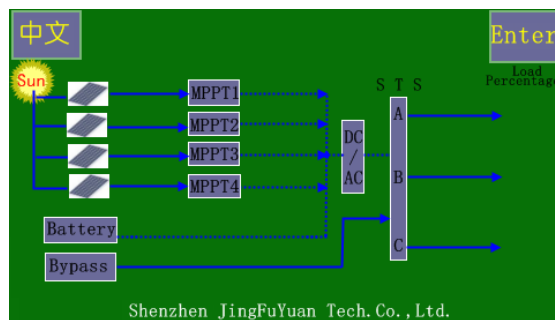


11、Over The Past 31Days Power Data Curve Graph

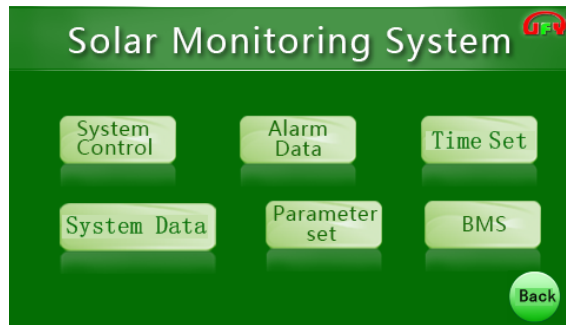
6.9 Parameter set

NOTE

This chapter should be operated by users with certain electrical knowledge and familiar with electrical principles and electrical components



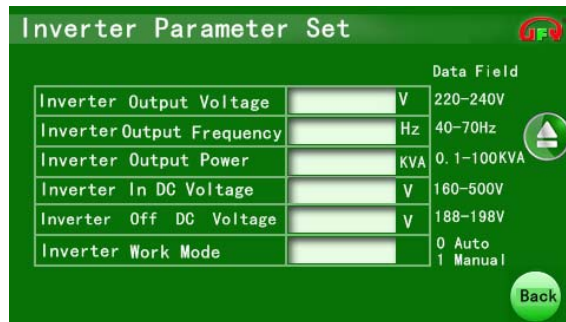
1、Tap “Enter” in the Solar Monitoring System menu



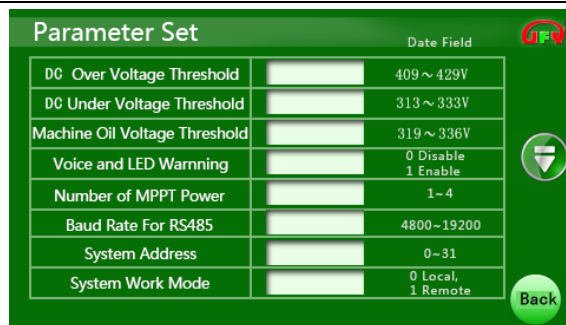
2、 Tap “Parameter set ” in the Solar Monitoring System menu



3、 Enter in the right password “6666” in the blank form



4、 Set the Inverter Parameter in the blank form



5、 Set the Inverter Parameter in the blank form

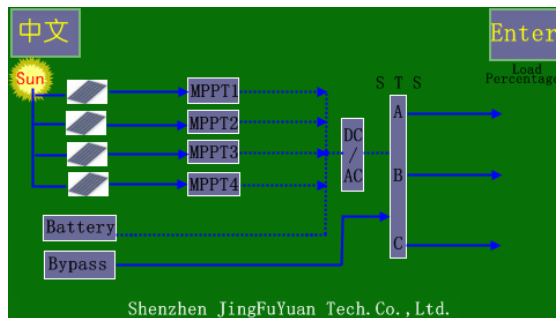


6、 Parameter set Succeed !

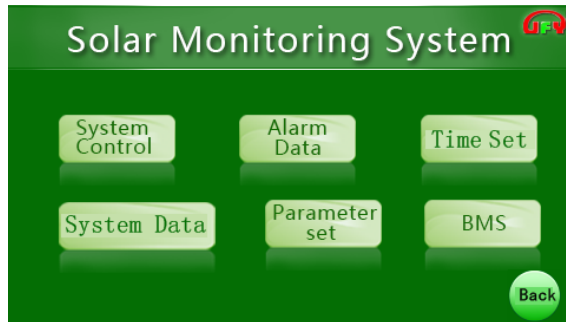
6.10 Battery Capacity

NOTE

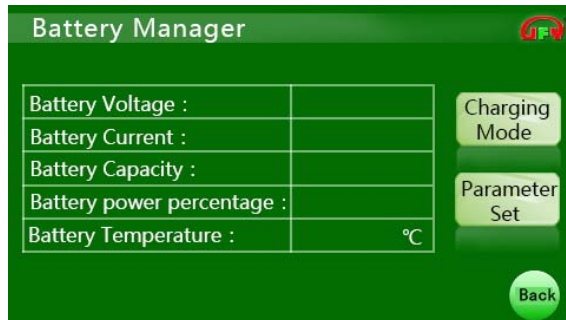
- This chapter should be operated by users with certain electrical knowledge and familiar with electrical principles and electrical components
- Users need to set the battery capacity at the first time you use the inverter , When the battery capacity is changed ,the battery capacity should be reset following way.



1、 Tap “Enter” in the Solar Monitoring System menu



2、 Tap “BMS ” into the sub-menu

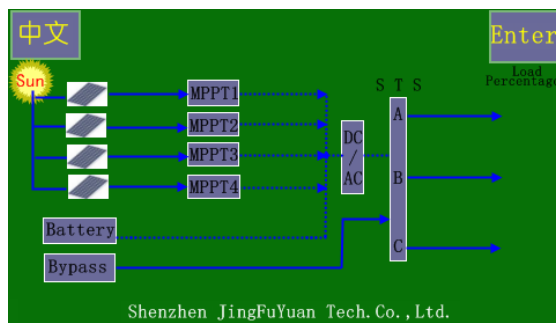


3、 Entering the right Battery capacity in the blank form of Battery Capacity

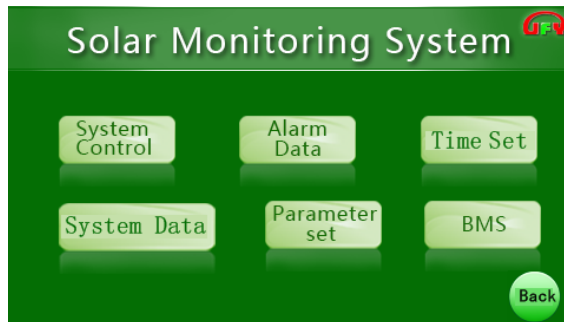
6.11 Recover Factory Set

NOTE

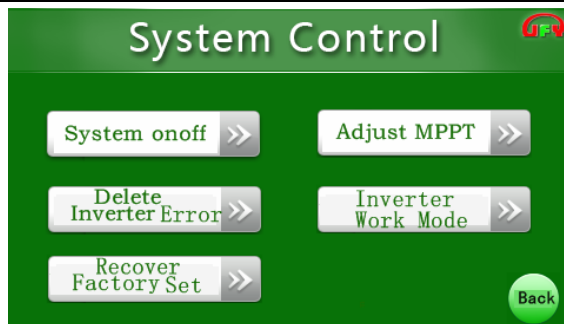
The following instruction show you how to recover factory set



1、 Tap “Enter” in the Solar Monitoring System menu



2、 Tap “System Control” into the sub-menu



3、 Tap “Recover Factory Set” to Recover Factory

7、 Routine maintenance

Due to the effects of ambient temperature, humidity, dust and vibration, the inner components of the inverter will be aging and worn out. To ensure the system safety and inverter efficiency, it is necessary to carry out routine and periodic maintenance.



All the work described in this chapter must be carried out by qualified personnel only. Do not leave any metal parts such as the screw and washer inside the inverter to **avoid device damages**.



Wait at least 15 minutes until the inner capacitors discharge before any work on the inverter.

| Item | Method | Interval |
|---|---|---|
| System general running status and environment | <p>Check the inverter for visual damages or deformation.</p> <p>Check the inverter for any abnormal noise during running.</p> <p>Check each parameter of the inverter during normal operation</p> <p>Check the important components.</p> <p>Check if the enclosure temperature is normal with the thermal imager.</p> <p>Check the air inlet and outlet.</p> <p>Check the ambient humidity, dust and the air inlet filter.</p> <p>Notice! Check the air inlet and outlet. Otherwise, the machine will be damaged by overheating.</p> | Every six months |
| System cleaning | <p>Check whether circuit board and the component are clean.</p> <p>Check the temperature and dust of the heat-sink. Use pressurized air and open the fan to clean the module if necessary.</p> <p>Replace the air filter.</p> | From every six months to annually depending on the dust deposits. |

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| | | |
|--------------------------|--|---|
| Power circuit connection | <p>Check whether the power cable connections are loose. Retighten them with the torque specified in the manual if necessary.</p> <p>Check if the power cables and control cables, especially the surface in contact with the metal are damages.</p> <p>Check the wrap belt of the connection terminals is strip-off.</p> | <p>Six months after commissioning for the first time and then once every six months to a year</p> |
|--------------------------|--|---|

8、 Fault and Troubleshooting

This section is dedicated to the faults shown on the LCD, possible reasons and troubleshooting. In case the fault cannot be removed following the instructions in this section, please contact us.

| Fault | Description | Troubleshooting | Remark |
|------------------------|--|-----------------------------------|--------|
| Input DC UVP | The Voltage of the PV Arrays exceeds limit range | Check the Voltage of the PV Array | |
| Input DC OVP | The Voltage of the PV Arrays exceeds limit range | Check the Voltage of the PV Array | |
| System SPD Break | The SPD is not work normally | Replace the SPD | |
| EPO | The EPO is not released | Release the EPO | |
| Battery Reversal | The Battery cable is not connected correctly | Check the Battery cable | |
| Over loading Over time | The Load exceeds limit range.the inverter will restart for three times in ten minutes. until the inverter work normally.if the inverter can not work normally after ten minutes the inverter will stop | Limit the load | |

9、 Appendix

9.1 Technical Data

The following tables list the technical data of the inverter. Basic production information and performance of the inverter are available from these tables.

9.1.1 PV Input Data

| | | | | |
|---------------------------------|-------------|-------------|-------------|--------------|
| ETS-B Series | ETS-B-10KVA | ETS-B-15KVA | ETS-B-20KVA | ETS-B-30 KVA |
| PV Input Voltage | 250V-450V | 250V-450V | 250V-450V | 250V-450 V |
| Recommend Input Voltage | 330V | 330V | 330V | 330V |
| Single Module Max Input Power | 11KW | 11KW | 11KW | 11KW |
| Single Module Max Input Current | 45A | 45A | 45A | 45A |
| Number Of PV Input Module | 1/2 | 1/2 | 2/3 | 3/4 |
| Input reverse protection | YES | YES | YES | YES |
| ETS-B Series | ETS-B-40KVA | ETS-B-50KVA | ETS-B-60KVA | |
| PV Input Voltage | 250V-450V | 420V-650V | 420V-650V | |
| Recommend Input Voltage | 330V | 480V` | 480V | |
| Single Module Max Input | 11KW | 16KW | 16KW | |

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| | | | | |
|--|-----|-----|-----|--|
| Power | | | | |
| Single Module Max Input Current | 37A | 37A | 37A | |
| Number Of PV Input Module | 3/4 | 4/5 | 5/6 | |
| Input reverse protection | YES | YES | YES | |

9.1.2 Battery Data

| | | |
|---------------------|-------------------------------------|-------------------------|
| ETS-B Series | | |
| | ETS-B-10KVA、15KVA、20KVA、30KVA、40KVA | ETS-B-40KVA、50KVA、60KVA |
| Voltage | 220V | 348V |

9.1.3 Output Parameters

| ETS-B Series | ETS-B-10KVA | ETS-B-15KVA | ETS-B-20KVA | ETS-B-30KVA |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|
| Output Type | 3L+N+PE | 3L+N+PE | 3L+N+PE | 3L+N+PE |
| Rated Output Power | 8KW | 12KW | 16KW | 24KW |
| Rated Output Current | 12. 1A | 18. 2A | 24. 3A | 36. 4A |
| Output Voltage | 380/400/415 V | 380/400/415V | 380/400/415V | 380/400/415V |
| Output Frequency | 50Hz/60Hz | 50Hz/60Hz | 50Hz/60Hz | 50Hz/60Hz |
| Nominal | 0. 8 | 0. 8 | 0. 8 | 0. 8 |

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| | | | | |
|-------------------------|--------------------|--------------------|--------------------|--|
| Factor | | | | |
| ETS-B Series | ETS-B-40KVA | ETS-B-50KVA | ETS-B-60KVA | |
| Output Type | 3L+N+PE | 3L+N+PE | 3L+N+PE | |
| Rated Output Power | 32KW | 40KW | 48KW | |
| Rated Output Current | 48.6A | 60.7A | 72.8A | |
| Output Voltage | 380/400/415V | 380/400/415V | 380/400/415V | |
| Output Frequency | 50Hz/60Hz | 50Hz/60Hz | 50Hz/60Hz | |
| Nominal Factor | 0.8 | 0.8 | 0.8 | |

9.1.4 Mechanical Parameters

| | | | | |
|-------------------|--------------------|--------------------|--------------------|--------------------|
| | | | | |
| | ETS-B-10KVA | ETS-B-15KVA | ETS-B-20KVA | ETS-B-30KVA |
| Dimensions(W×D×H) | 460mm*560mm*1040mm | 460mm*560mm*1040mm | 460mm*560mm*1040mm | 550mm*600mm*1300mm |
| Weight | 180Kg | 210Kg | 230Kg | 320Kg |
| | ETS-B-40KVA | ETS-B-50KVA | ETS-B-60KVA | |
| Dimensions(W×D×H) | 550mm*600mm*1300mm | 610mm*600mm*1450mm | 610mm*600mm*1450mm | |
| Weight | 400Kg | 450Kg | 450Kg | |

9.1.5 System

| | |
|-----------|--|
| Parameter | |
|-----------|--|

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| | |
|----------------------------|---|
| | ETS-B-10KVA、15KVA、20KVA、30KVA、40KVA、50KVA、60KVA |
| Max Efficiency | ≥94.5% |
| Protection Degree | IP20 |
| Power Consumption at Night | <100W |
| Operating Temperature | -25℃~+50℃ |
| Cooling Method | Controlled force-air cooling |
| Max. Working Altitude | 6000m (operation with derating above 3000m, Please contact After-sales service Engineer.) |

9.1.6 Display and Communication

| | |
|---------------|---|
| Parameter | |
| | ETS-B-10KVA、15KVA、20KVA、30KVA、40KVA、50KVA、60KVA |
| Display | LCD |
| Communication | RS485 |

9.2 Exclusion of Liability

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9.3 About Us

PSC SOLAR INDUSTRIES, is a leading manufacturer of various power electronics products for renewable energy generation systems. Our products include converters, inverters, battery chargers and other power supplies for distributable generation systems in both grid-connected and stand-alone applications. The power rating of our products covers a range from several hundred watts to large mega-watt systems.

Our pursuit is to help our customers acquire stable and clean power with minimum cost, maximum reliability and enhanced safety.

9.4 Contact Information

Should you have any questions or queries about this product, please contact us through the following information. We will be more than happy to assist you!

| | |
|------------|---|
| Company: | PSC SOLAR INDUSTRIES. |
| Website: | www.pscsolaruk.com |
| Email: | info@psc-solaruk.com |
| Address: | HEAD OFFICE: 41B OLUTOYE CRES. OFF ADENIYI JONES. IKEJA LAGOS BRANCH OFFICE: KM 38, LEKKI/EPE EXPRESS WAY. LAKOWE. LAGOS |
| Zip: | 101233 |
| Telephone: | +234 812 085 5444 or +234 808 955 2800 |
| Fax: | |

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