

# USER'S MANUAL

## HBP1800

Portable photovoltaic energy storage power station

Please download the software "SolarPowerMonitor2.2.81".

Download link: <https://bit.ly/2PyLg6>



### Appliances



Computer



TV



Air-  
Conditioning



Refrigerator



Washing  
machine



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## About the Manual

**Scope:** This manual describes the assembly, installation, operation and troubleshooting of this equipment. Please read this manual carefully before installation and operation. Retain this manual for future reference.

This manual provides safety and installation guidelines and information on tools and wiring .

### The following situations are not covered by the warranty :

- (1) Overdue the warranty period .
- (2) The serial number has been changed or lost.
- (3) The battery capacity is the lowest or the appearance of the device is damaged.
- (4) External factors such as transportation, negligence, etc.
- (5) This equipment has been damaged by an irresistible natural disaster .
- (6) Damage caused by not following the power supply conditions or operating environment .

This manual provides safety and installation guidelines and information on tools and wiring.

## Safety Notice



**WARNING:** This chapter contains important safety and operating instructions. Read and save this manual for future reference.

**WARNING :** This chapter contains important safety and operating instructions. Read and save this manual for future reference.

- 1.** Before using this unit , please read all instructions and precautions on this unit , understand the battery type and all relevant chapters in this manual to Prevent explosion which may lead to personal injury and battery damage .
- 2.** Do not disassemble the unit . When service or repair is required , send it to a professional service center . Incorrect assembly may result in electric shock or fire .
- 3.** To reduce the risk of electric shock , disconnect all wiring before attempting any maintenance or cleaning . Turning off the device does not reduce this risk .
- 4.** Caution - Only professionals should install this device and battery .
- 5.** Grounding Instructions - This equipment should be connected to a permanently grounded wiring system. Be sure to comply with local requirements and regulations to use this device .
- 6.** Never make AC output and AC input .
- 7.** Do not move this equipment during operation, please turn off the inverter when moving.



## Product Description

This is a multi-functional photovoltaic energy storage power station, integrated with battery, MPPT solar charge controller, high frequency pure sine wave inverter and UPS function module into one , which is suitable for outdoor backup electric compartment and spontaneous self-use system .

MPPT solar charge controller adopts advanced MPPT method and intelligent battery management design, which ensures the acquisition of maximum energy ;High frequency pure sine wave inverter adopts high frequency design , achievement high rate density , small size , simple operation and other advantages; The whole machine has high efficiency and is empty The load loss is small . Use large-capacity basket and high-density hammer pool , Improve system portability .

## Features

- Pure sine Wave AC Output Inverter with 1KW - 3KW rated power and power factor 1
- High power density with universal wheels and high portability.
- Setting input voltage and voltage range on the LCD Screen.
- 5V USB and 12V DC output supported.
- AC/PV input and battery priority level configurable on LCD
- Protection functions such as overload, over temperature and short circuit.

## Basic System Structure

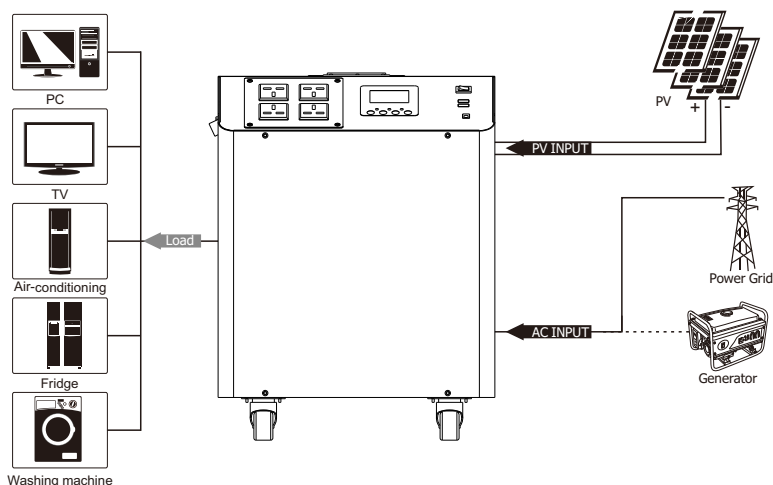
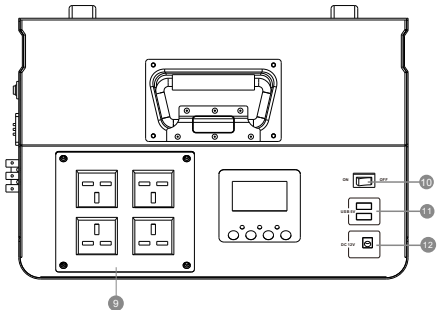
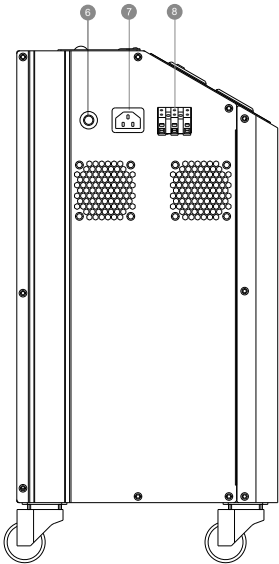
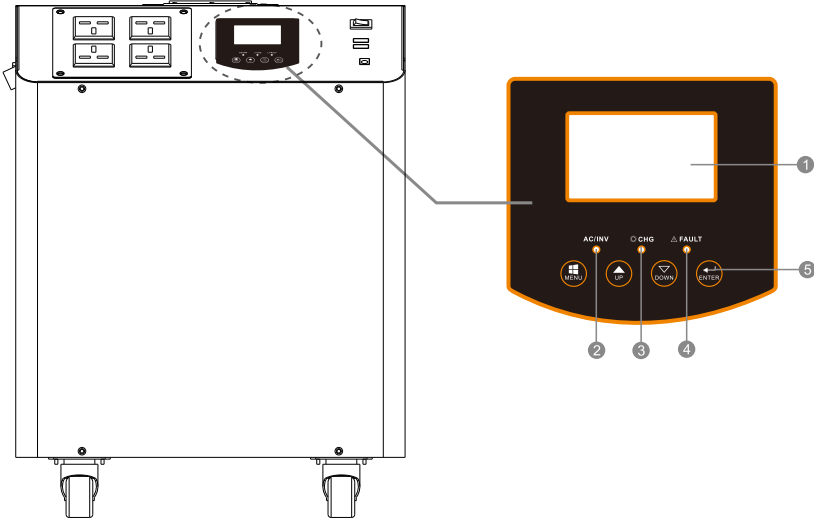


Figure I Hybrid power generation system

Product Description



- |                                     |                     |
|-------------------------------------|---------------------|
| 1. LCD display                      | 7. AC input         |
| 2. Status Indicator                 | 8. PV input         |
| 3. Charge/discharge Indicator       | 9. AC output        |
| 4. Indicator light                  | 10. Switch          |
| 5. Function Button                  | 11. DC5V USB output |
| 6. AC input over-current protection | 12. DC12V output    |

## Installation

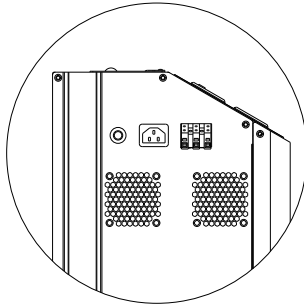
### Unpacking and Inspection

Check the equipment before installation. Make sure nothing in the package damages the product . The following contains included: Machine X 1  
User Manual X 1  
Mains input line X 1

### Preparation

Before turning on the device, please reserve a distance of more than 30CM above the device and to the left and right to ensure for heat dissipation.Input and Output Connection

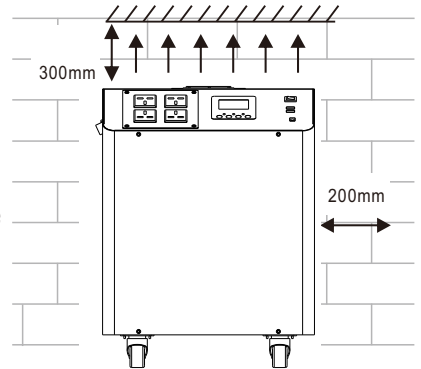
- 1.After power on, you can directly take power from the AC output.
- 2.DC output powered without turned on.
- 3.Connect the grid and the AC input terminal with the matching wires to load the mains and charge the battery.
- 4.Please make sure the cable is firmly connected and do not move the machine while it is running .



### Install Equipment

Taking the following notes into consideration before choosing an installation location:

1. Do not install the inverter on flammable building materials .
2. Pls install it on a sturdy surface .
3. Install this inverter at eye level so that the LCD display can be read at any time .
4. In order to properly dissipate the air circulation, please leave a space of about 200mm from the side and about 300mm above the device .
5. To ensure the best operation, the ambient temperature should be between 0-50 ° C
6. It is recommended to install vertically on the wall
7. Leave a little free space around the inverter, as shown in the picture to the right, to ensure adequate heat dissipation and enough space to move the cables
8. heat dissipation and enough space to move the cables



Only suitable for installation on concrete or other fire resistant surfaces

**PV Panel Connection**

Please choose the appropriate wire according to the matching photovoltaic panel.

**PV module selection :**

When choosing the right PV module, be sure to consider the following parameters:

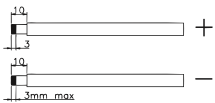
- 1. The open-circuit voltage (VOC) of the PV module does not exceed the maximum open-circuit voltage of the PV array of the inverter.
- 2. The open circuit voltage (VOC) of the PV module should be higher than the minimum value of the cell voltage.
- 3. The maximum power point voltage of the photovoltaic array should be close to the MPPT optimal working voltage of the inverter or within the MPPT working voltage range. If a photovoltaic module cannot meet this requirement, it is necessary to connect the photovoltaic modules in series to meet the requirements. See the table below.

|                                     |          |          |           |
|-------------------------------------|----------|----------|-----------|
| power                               | 1KW      | 2KW      | 3KW       |
| Maximum charging current            | 60A      |          |           |
| PV open circuit voltage             | 75VDC    | 100VDC   | 145VDC    |
| Photovoltaic MPPT voltage range cut | 15-75VDC | 30-80VDC | 30-120VDC |
| System battery voltage              | 12.8VDC  | 25.6VDC  | 25.6VDC   |

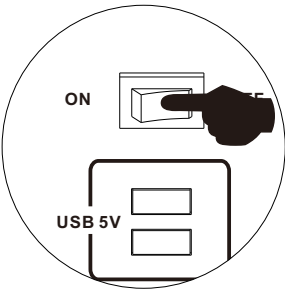
Follow the steps below to connect the PV module:

I.Remove the 10mm positive and negative conductor insulating sleeves on the PV inverter.

II.Check that the cable connection between the PV module and the PV input connector is correct. Then, connect the positive (+) side of the cable to the positive (+) side of the PV input connector. Connect the negative (-) of the cable to the negative (-) of the PV input con



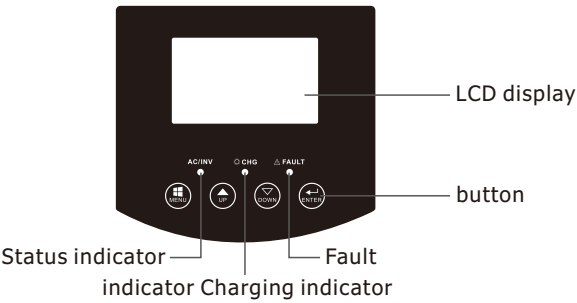
Operation  
On/Off



Once the unit is installed correctly, batteries is connected. The unit could be turned on by simply pressing the on/off button (the button on the chassis).

Operating and Display Panels

The operation and display panel shown in the following figure is located on the front panel of the inverter. It includes three indicator lights , four function keys and an LCD The display screen indicates the running status and input and output information .



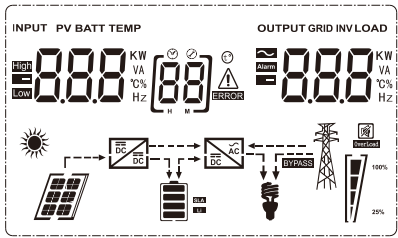
LED Indicator











| LED Indicator |        |          | Messages  |
|---------------|--------|----------|---|
| AC/ INV       | Green  | Solid On | Output is powered by grid in Line mode.             |
|               |        | Flashing | Output is powered by battery or PV in battery mode. |
| CHG           | Yellow | Flashing | Battery is charging or discharging.                 |
| FAULT         | Red    | Solid On | Fault occurs in the inverter.                       |
|               |        | Flashing | Warning condition occurs in the inverter.           |













Function Keys

| Function Keys | Description   |
|---------------|---|
| MENU          | Enter reset mode or setting mode go to previous selection.  |
| UP            | Increase the setting data.  |
| DOWN          | Decrease the setting data.  |
| ENTER         | Enter setting mode and Confirm the selection in setting mode go to next selection or exit the reset mode. |






LCD Display Icons







| Icon   | Function description   |  |
|--|--|--|
| Input Source Information and Output Information                                    |  |  |
|    | Indicates the AC information.  |  |
|    | Indicates the DC information.  |  |
|    | Indicate input voltage, input frequency, PV voltage, battery voltage and charger current.  |  |
|  | Indicate output voltage, output frequency, load in VA, load in Watt and discharging current.   |  |
| Configuration Program and Fault Information  |  |  |
|    | Indicates the setting programs.  |  |
|    | Indicates the warning and fault codes.   |  |
|  | Warning: flashing   with warning code. |  |
|  | Fault: lighting   with fault code.     |  |
| Battery Information  |  |  |
|  | Indicates battery level by 0-24%, 25-49%, 50-74% and 75-100% in battery mode and charging status in line mode.   |  |
| In AC mode, it will present battery charging status.                               |  |  |
| Status   | Battery voltage  | LCD Display  |
| Constant   | <2V/cell   | 4 bars will flash in turns.  |
| Current mode / Constant Voltage mode   | 2 ~ 2.083V/cell  | Bottom bar will be on and the other three bars will flash in turns.    |
|  | 2.083 ~ 2.167V/cell  | Bottom two bars will be on and the other two bars will flash in turns. |
|  | > 2.167 V/cell   | Bottom three bars will be on and the top bar will flash.               |
| Batteries are fully charged.   |  | 4 bars will be on.   |

| In battery mode, it will present battery capacity. |                          |   |
|--|--------------------------|---|
| Load Percentage                                    | Battery Voltage          | LCD Display   |
| Load >50%  | < 1.717V/cell            |  |
|  | 1.717V/cell ~ 1.8V/cell  |  |
|  | 1.8 ~ 1.883V/cell        |  |
|  | > 1.883 V/cell           |  |
| 50%> Load > 20%                                    | < 1.817V/cell            |  |
|  | 1.817V/cell ~ 1.9V/cell  |  |
|  | 1.9 ~ 1.983V/cell        |  |
|  | > 1.983V/cell            |  |
| Load < 20%   | < 1.867V/cell            |  |
|  | 1.867V/cell ~ 1.95V/cell |  |
|  | 1.95 ~ 2.033V/cell       |  |
|  | > 2.033V/cell            |  |


### Load Information

|  |  |  |  |  |
|--|--|--|--|--|
| <b>OVERLOAD</b>  | Indicates overload.  |  |  |  |
|  | Indicates the load level by 0-24%, 25-49%, 50-74% and 75-100%.                     |  |  |  |
|  | 0%~24%   | 25%~49%  | 50%~74%  | 75%~100%   |
|  |  |  |  |  |

### Mode Operation Information

|  |  |
|--|--|
|  | Indicates unit connected to the mains.           |
|  | Indicates unit connected to the PV panel.        |
| <b>BYPASS</b>  | Indicates load is supplied by utility power.     |
|  | Indicates the solar charger is working.          |
|  | Indicates the DC/AC inverter circuit is working. |





### Mute Operation

|  |                                   |
|--|-----------------------------------|
|  | Indicates unit alarm is disabled. |
|--|-----------------------------------|

## LCD Setting

After pressing and holding "ENTER" button for 2 seconds, the unit will enter setting mode. Press "UP" or "DOWN" button to select setting programs. And then, press "ENTER" or "MENU" button to confirm the selection and exit.

### Setting Programs:

| Program | Description                      | Selectable option  |
|---------|----------------------------------|--|
| 00      | Exit setting mode                | Escape<br>  |
| 01      | Output source priority selection |  <p>Solar energy provides power to the loads as first priority. If battery voltage has been higher than the setting point in program 21 for 5 minutes, the inverter will turn to battery mode, solar and battery will provide power to the load at the same time. When the battery voltage drops to the setting point in program 20, the inverter will turn to bypass mode, utility provides power to the load only, and the solar will charge the battery at the same time.</p>  |
|         |                                  |  <p>Solar energy provides power to the loads as first priority. If battery voltage has been higher than the setting point in program 21 for 5 minutes, and the solar energy has been available for 5 minutes too, the inverter will turn to battery mode, solar and battery will provide power to the load at the same time. When the battery voltage drops to the setting point in program 20, the inverter will turn to bypass mode, utility provides power to the load only, and the solar will charge the battery at the same time.</p> |
|         |                                  | (default)<br> <p>Utility will provide power to the loads as first priority. Solar and battery energy will provide power to the loads only when utility power is not available.</p>  |



|    |  |  |  |
|----|--|--|--|
| 02 | AC input voltage range   | Appliances (default)<br>[02] RPL   | If selected, acceptable AC input voltage range will be within 90-280VAC.   |
|    |  | UPS<br>[02] UPS  | If selected, acceptable AC input voltage range will be within 170-280VAC.  |
|    |  | VDE<br>[02] VDE  | If selected, acceptable AC input voltage range will conform to VDE4105(184VAC-253VAC)                                    |
|    |  | GEN<br>[02] GEN  | When the user uses the device to connect the generator, select the generator mode.                                       |
| 03 | Output voltage   | [03] 230 <sup>v</sup>  | Set the output voltage amplitude, (220VAC-240VAC)  |
| 04 | Output frequency   | 50HZ(default)<br>[04] 500  | 60HZ<br>[04] 600   |
| 05 | Solar supply priority  | [05] BLU   | Solar energy provides power to charge battery as first priority  |
|    |  | (default)<br>[05] LBU  | Solar energy provides power to the loads as first priority   |
| 06 | Overload bypass: When enabled, the unit will transfer to line mode if overload occurs in battery mode. | Bypass disable<br>[06] BYD   | Bypass enable (default)<br>[06] BYE  |
| 07 | Auto restart when overload occurs  | Restart disable (default)<br>[07] LTD  | Restart enable<br>[07] LTE   |
| 08 | Auto restart when over temperature occurs  | Restart disable (default)<br>[08] LTD  | Restart enable<br>[08] LTE   |
| 10 | Charger source priority: To configure charger source priority  | If this inverter/charger is working in Line, Standby or Fault mode, charger source can be programmed as below: |  |
|    |  | Solar first<br>[10] CSO  | Solar energy will charge battery as first priority. Utility will charge battery only when solar energy is not available. |
|    |  | Solar and Utility (default)<br>[10] SNU  | Solar energy and utility will charge battery at the same time.   |

|    |   |  |   |
|----|---|--|---|
|    |   | Only Solar<br>[10] 050   | Solar energy will be the only charger source no matter utility is available or not.                   |
|    |   | If this inverter/charger is working in Battery mode or Power saving mode, only solar energy can charge battery. Solar energy will charge battery if it's available and sufficient. |   |
| 11 | Maximum charging current: To configure total charging current for solar and utility chargers.(Max. charging current=utility charging current +solar charging current) | 2-3KW  |   |
|    |   | MPPT-50A   |   |
|    |   | MPPT-60A   |   |
|    |   | 60A (default)<br>[1] 60 A  | Setting range is from 1 A to 80A. Increment of each click is 1A.                                      |
|    |   | MPPT-80A   |   |
|    |   | 80A (default)<br>[1] 80 A  | Setting range is from 1 A to 80A. Increment of each click is 1A.                                      |
|    |   | MPPT-100A  |   |
|    |   | 100A (default)<br>[1] 100 A  | Setting range is from 1 A to 100A. Increment of each click is 1A.                                     |
| 13 | Maximum utility charging current  | PWM-50A  |   |
|    |   | 60A (default)<br>[1] 60 A  | Setting range is from 1 A to 80A. Increment of each click is 1A.                                      |
| 17 | Bulk charging voltage (C.V voltage)   | 20A (default)<br>[13] 20 A   | 30A (Maximum current)<br>[13] 30 A  |
|    |   | 28.2V (default)<br>[17] CV 28.2 V  |   |
| 18 | Floating charging voltage   | If "User-Defined" LI is selected in program 14, this program can be set up. Setting range is from 24.0V to 29.2V. Increment of each click is 0.1V                                  |   |
|    |   | 27.0V (default)<br>[18] FLV 27.0 V   |   |
| 19 | Low DC cut off battery voltage setting  | If "User-Defined" LI is selected in program 14, this program can be set up. Setting range is from 24.0V to 29.2V. Increment of each click is 0.1V.                                 |   |
|    |   | 20.4V (default)<br>[19] COV 20.4 V   | Low DC cut-off voltage will be fixed to setting value no matter what percentage of load is connected. |























|    |  |   |  |
|----|--|---|--|
| 20 | Battery stop discharging voltage when grid is available  | 23V (default)<br>[20] 230 <sup>v</sup>  | Setting range is from 22.0V to 29.0V<br>Increment of each click is 0.1V  |
| 21 | Battery stop charging voltage when grid is available   | Available options for 24V models:<br>27.0V (default)<br>[21] 270 <sup>v</sup> | Setting range is from 22.0V to 29.0V.<br>Increment of each click is 0.1V   |
| 22 | Auto turn page   | (default)<br>[22] PLE   | If selected, the display screen will auto turn the display page.   |
|    |  | [22] PLd  | If selected, the display screen will stay at latest screen user finally switches.  |
| 23 | Backlight control  | Backlight on<br>[23] LON  | Backlight off (default)<br>[23] LOF  |
| 24 | Alarm control  | Alarm on (default)<br>[24] 6ON  | Alarm off<br>[24] 6OF  |
| 25 | Beeps while primary source is interrupted  | Alarm on<br>[25] AON  | Alarm off (default)<br>[25] AOF  |
| 27 | Record Fault code  | Record enable (default)<br>[27] FON   | Record disable<br>[27] FOF   |
| 28 | Solar power balance: When enabled, solar input power will be automatically adjusted according to connected load power. | Solar power balance enable<br>[28] 5bE  | If selected, the solar input power will be automatically adjusted according to the following formula:<br>Max. Input solar power = Max. battery charging power + Connected load power when the machine in OffGrid workstate.                                      |
|    |  | Solar power balance disable (default)<br>[28] 5bd                             | If selected, the solar input power will be the same to max. Battery charging power no matter how much loads are connected. The max. battery charging power will be based on the setting current in program 11 ( Max. solar power = Max. battery charging power ) |
| 29 | Power saving mode enable/disable   | Saving mode disable (default)<br>[29] 5dS                                     | If disable, no matter connected load is low or high, the on/off status of inverter output will not be effected.  |
|    |  | Saving mode enable<br>[29] 5eN  | If enable, the output of inverter will be off when connected load is pretty low or not detected.   |










|    |                                    |  |  |
|----|------------------------------------|--|--|
| 30 | Battery equalization               | Battery equalization<br>[30] EEN                         | Battery equalization disable(default)<br>[30] Ed5  |
| 31 | Battery equalization voltage       | 28.8V (default)<br>[31] E <sup>V</sup> 28.8 <sup>V</sup> | Setting range is from 24.0V to 29.2V. Increment of each click is 0.1V.   |
| 33 | Battery equalization time          | 60min(default)<br>[33] 60                                | Setting range is from 5 min to 900min.<br>Increment of each click is 5min.   |
| 34 | Battery equalization timeout       | 120min(default)<br>[34] 120                              | Setting range is from 5 min to 900min.<br>Increment of each click is 5min.   |
| 35 | Equalization interval              | 30days(default)<br>[35] 30d                              | Setting range is from 0 to 90days.<br>Increment of each click is 1 day.  |
| 36 | Equalization activated immediately | Enable<br>[36] AEN                                       | Disable(default)<br>[36] Ad5<br><br>If equalization function is enabled in program 30, this program can be set up. If "Enable" is selected in this program, it's to activate battery equalization immediately and LCD main page will shows "E <sup>V</sup> ". If "Disable" is selected, it will cancel equalization function until next activated equalization time arrives based on program 35 setting. At this time, "E <sup>V</sup> " will be shown in LCD main page too. |

After pressing and holding "MENU" button for 6 seconds, the unit will enter reset model. Press "Up" and "DOWN" button to select programs. And then ,press "ENTER" button to exit.














|     |                       |                        |
|-----|-----------------------|------------------------|
| Set | (default)<br>[dt] nlt | Reset setting disable. |
|     | [dt] t5t              | Reset setting enable.  |

## Fault Reference Code

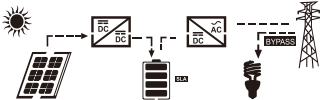

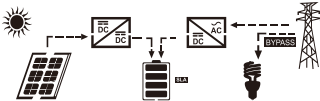

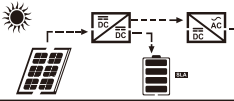
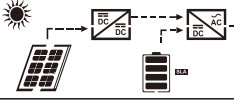


| Fault Code | Fault Event                               | Icon on   |
|------------|---|---|
| 01         | Fan is locked when inverter is off        |    |
| 02         | Inverter transformer over temperature     |    |
| 03         | battery voltage is too high               |    |
| 04         | battery voltage is too low                |    |
| 05         | Output short circuited                    |    |
| 06         | Inverter output voltage is high           |    |
| 07         | Overload time out                         |    |
| 08         | Inverter bus voltage is too high          |    |
| 09         | Bus soft start failed                     |    |
| 11         | Main relay failed                         |    |
| 21         | Inverter output voltage sensor error      |    |
| 22         | Inverter grid voltage sensor error        |    |
| 23         | Inverter output current sensor error      |    |
| 24         | Inverter grid current sensor error        |    |
| 25         | Inverter load current sensor error        |   |
| 26         | Inverter grid over current error          |  |
| 27         | Inverter radiator over temperature        |  |
| 31         | Solar charger battery voltage class error |  |
| 32         | Solar charger current sensor error        |  |
| 33         | Solar charger current is uncontrollable   |  |
| 41         | Inverter grid voltage is low              |  |
| 42         | Inverter grid voltage is high             |  |

|    |  |   |
|----|--|---|
| 43 | Inverter grid under frequency          | [43]  <small>WARNING</small>  |
| 44 | Inverter grid over frequency           | [44]  <small>WARNING</small> |
| 51 | Inverter over current protection error | [51]  <small>WARNING</small> |
| 52 | Inverter bus voltage is too low        | [52]  <small>WARNING</small> |
| 53 | Inverter soft start failed             | [53]  <small>WARNING</small> |
| 55 | Over DC voltage in AC output           | [55]  <small>WARNING</small> |
| 56 | Battery connection is open             | [56]  <small>WARNING</small> |
| 57 | Inverter control current sensor error  | [57]  <small>WARNING</small> |
| 58 | Inverter output voltage is too low     | [58]  <small>WARNING</small> |

## Warning Indicator

| Fault Code | Fault Event                                 | Icon on  |
|------------|---|--|
| 61         | Fan is locked when inverter is on.          | [61]    |
| 62         | Fan 2 is locked when inverter is on.        | [62]    |
| 63         | Battery is over-charged.                    | [63]    |
| 64         | Low battery.                                | [64]    |
| 67         | Overload.                                   | [67]   |
| 70         | Output power derating.                      | [70]    |
| 72         | Solar charger stops due to low battery.     | [72]    |
| 73         | Solar charger stops due to high PV voltage. | [73]    |
| 74         | Solar charger stops due to over load.       | [74]    |
| 75         | Solar charger over temperature.             | [75]    |
| 76         | PV charger communication error.             | [76]    |
| 77         | Parameter error.                            | [77]    |

Operating State Description

| Operation state   | Description   | LCD display   |
|-------------------|---|---|
| Utility-Tie state | PV energy is charger into the battery and utility provide power to the AC load.   | PV is on<br>   |
|                   |   | PV is off<br>  |
| Charge state      | PV energy and grid can charge batteries.  |    |
| Bypass state      | Error are caused by inside circuit error or external reasons such as over temperature, output short circuited and so on.  |    |
| Off-Grid state    | The inverter will provide output power from battery and PV power.   | Inverter power loads from PV energy<br>              |
|                   |   | Inverter power loads from battery and PV energy<br> |
|                   |   | Inverter power loads from battery only<br>         |
| Stop mode         | The inverter stop working if you turn off the inverter by the soft key or error has occurred in the condition of no grid. |    |



**Display Setting**

The LCD display information will be switched in turns by pressing "UP" or "DOWN" key. The selectable information is switched as below order: battery voltage, battery current ,inverter voltage, inverter current, grid voltage, grid current, load in Watt, load in VA, grid frequency, inverter frequency, PV voltage, PV charging power, PV charging output voltage, PV charging output current.

| Selectable information                              | LCD display                                   |   |
|---|---|---|
| Battery voltage/DC discharging current              | <div>BATT</div> <div>26.0<sup>V</sup></div>   | <div>48.0<sup>A</sup></div>                   |
| Inverter output voltage/Inverter output current     | <div>22.9<sup>V</sup></div>                   | <div>INV</div> <div>6.70<sup>A</sup></div>    |
| Grid voltage/Grid current                           | <div>22.9<sup>V</sup></div>                   | <div>-3.0<sup>A</sup></div>                   |
| Load in Watt/VA                                     | <div>15.0<sup>KW</sup></div>                  | <div>LOAD</div> <div>16.8<sup>KVA</sup></div> |
| Grid frequency/Inverter frequency                   | <div>INPUT</div> <div>50.0<sup>Hz</sup></div> | <div>INV</div> <div>50.0<sup>Hz</sup></div>   |
| PV voltage and power                                | <div>PV</div> <div>6.10<sup>V</sup></div>     | <div>1.00<sup>KW</sup></div>                  |
| PV charger output voltage and MPPT charging current | <div>PV</div> <div>25.0<sup>V</sup></div>     | <div>OUTPUT</div> <div>4.00<sup>A</sup></div> |

**SPECIFICATIONS**

Table 1 Line Mode Specifications

| MODEL           |                                   | HBP18-1012                  | HBP18-2024  | HBP18-3024    |
|-----------------|-----------------------------------|-----------------------------|-------------|---------------|
| INVERTER        | Rated Power                       | 1KW                         | 2KW         | 3KW           |
|                 | Waveform                          | Pure Sine Wave              |             |               |
|                 | AC Voltage Output                 | 230Vac                      |             |               |
|                 | Rated Battery Input Voltage       | 12VDC                       | 24VDC       |               |
|                 | Efficiency                        | 90%                         |             |               |
| PV Input        | Max PV Current                    | 60A                         |             |               |
|                 | MPPT Tracking Efficiency          | 98%max                      |             |               |
|                 | Max PV Array Open Circuit Voltage | 75VDC                       | 100VDC      | 145VDC        |
|                 | PV Array MPPT Voltage Range       | 15~75VDC                    | 30~80VDC    | 30~120VDC     |
| AC Input        | Rated Input Voltage               | 230Vac ±5%                  |             |               |
|                 | Input Voltage Range               | 90-280VAC                   |             |               |
|                 | Frequency Range                   | 50Hz / 60Hz                 |             |               |
|                 | Transfer Time                     | 10ms (UPS, VDE); 20ms (APL) |             |               |
|                 | AC Charge Current                 | 10/20A (±4A)                |             | 20A/30A (±4A) |
| DC Output       | USB 5V                            | 2PCS                        |             |               |
|                 | 12V                               | 1PCS                        |             |               |
| Lifepo4 Battery | Battery Type                      | Lifepo4 Battery             |             |               |
|                 | Capacity                          | 100Ah/1280Wh                | 92Ah/2355Wh | 150Ah/3840Wh  |
|                 | Rated Voltage                     | 12.8VDC                     | 25.6VDC     |               |
|                 | Rated Output Current              | 100A                        |             |               |



# Warranty registration card

## Warning

1. All the customer information on the card should be correct and with a stamp on, by the dealer or retailer.
2. From the date you purchase the machine, warranty period for machine is 1 year, and for battery is 1 year.
3. Our company will not take responsibility as to the follow malfunction:
  - a). Bad transportation, loading, unloading and storage.
  - b). Maintain, refit and setup the machine without our authorization.
  - c). Over-voltage and overload.
  - d). Any damages by force majeure.
  - e). Damages by misuse.
4. Please show this card when sending your equipment for maintenance.

**User name:** \_\_\_\_\_

Address: \_\_\_\_\_

**Tel:** \_\_\_\_\_ **Associator:** \_\_\_\_\_

Code:\_\_\_\_\_

Type No.: \_\_\_\_\_

Date: \_\_\_\_\_

Sales representative:(stamp)

### The type and the code:

| DATE | SERVICE RECORD | TRANSACTOR |
|------|----------------|------------|
|      |                |            |
|      |                |            |
|      |                |            |
|      |                |            |
|      |                |            |