AVCON

Huaping Wisdom Information Technology (Shenzhen) Co. , Ltd.

User Manual

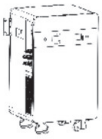
16KWH-5KW Off-grid Inverter & Controller All-in-one Machine

Contents

1. Disclaimer

To protect your legitimate rights and interests, please carefully read this User Manual before using the product, so as to ensure correct operation with a full understanding of the content. After reading, keep this User Manual properly for future reference. Improper operation of this product may result in serious injury to yourself or others, as well as product damage and property loss. Once you start using this product, it shall be deemed that you have read, understood,acknowledged and accepted all the terms and contents of this User Manual, Disclaimer and Safety Instructions. The user shall be responsible for their own actions and all consequences arising therefrom. Huaping Co., Ltd. (hereinafter referred to as Huaping Co., Ltd.) shall not be liable for any losses caused by the user's failure to use the product in accordance with this User Manual. Subject to compliance with applicable laws and regulations, our company reserves the final interpretation right of this document and all relevant documents of the product. In case of any update, revision or termination of the document or product, no further notice will be given. Please visit the official website of Huaping Co., Ltd. to obtain the latest product information.

2. Packing List (including Wooden Box Instructions)

	UN-approved wooden box, plywood, plywood, internal dimensions 813mm*526mm*446mm±5mm (length*width*height) reference dimensions			M8*80 expansion bolt *4M4X8 SUS304 countersunk headHexagon socket countersunk head screws *6
	16KWh & 5KW all-in-one unit *1		Packaging Bag	PlainPlasticBag90cm*100cm, Transparent, 1 Piece
Certificate of Conformity Warranty Card	Certificate of Conformity× 1 Warranty Card× 1			User Manual × 1
	SDatalog-BWiFi-E52WiFi Module × 1		Mc4 Male and Female Connectors	**PV Input:** PV+: Female Connector × 1 PV-: Male Connector × 1 **AC OUT:** L + N + PE: Female Connectors × 3 **AC IN:** L + N + PE: Male Connectors × 3

3. Safety Instructions

1. It is strictly prohibited to expose this product to sources of fire, water, or other liquids. Avoid using the product in direct sunlight or humid environments.
2. It is strictly prohibited to install the power supply in harsh environments such as areas with oil fumes, flammable and explosive atmospheres, high temperatures exceeding 40°C, low temperatures below 0°C, or areas with high concentrations of dust. Otherwise, the product's performance will be severely reduced, or even damaged, potentially posing safety hazards.
3. It is prohibited to use this product in environments with strong static electricity or strong magnetic fields.
4. This product should be installed or operated by professionals. Professionals must be familiar with local regulatory standards and electrical systems, have undergone professional training, and be well-versed in the relevant knowledge of this product. Non-professionals are prohibited from dismantling this product in any way. There are non-safe voltages inside this product, which can cause personal injury. If maintenance is required, please contact our professional maintenance personnel. Unauthorized disassembly will not be covered by warranty or quality assurance!
5. Do not use parts or accessories not provided by the official manufacturer. If replacement is necessary, please inquire and purchase through official sales channels.
6. Do not use this power supply in parallel with other power supplies to avoid damage.
7. It is prohibited to stack other heavy objects on this product. It is also prohibited to forcibly block the fan during use.
8. Please handle this product with care, avoiding impacts, drops, and severe vibrations. If there is severe external impact, please immediately turn off the power and stop using it. During transportation, please secure it well to avoid vibrations and impacts. For long-distance transportation, it is recommended to continue using the original packaging.
9. If the product accidentally falls into water during use, please place it in a safe and open area and do not approach it until it dries. The dried product should not be used again and should be disposed of properly according to the method described in the "Disposal" section below. If the product catches fire, please use fire-fighting equipment in the following recommended order: water or water mist, sand, fire blanket, dry powder, carbon dioxide fire extinguisher.
10. If there are contaminants on the product interface, please use a dry cloth to clean them off.
11. This product is not recommended for powering medical emergency equipment related to personal safety, including but not limited to hospital-grade ventilators (hospital version CPAP: Continuous Positive Airway Pressure), artificial lungs (ECMO, Extracorporeal Membrane Oxygenation), etc. Additionally, home-use ventilators (home version CPAP) can be used normally in a home environment, generally without continuous professional monitoring. Please follow medical advice and consult with the manufacturer regarding the restrictions on using related equipment. If used for general medical equipment, please be sure to pay attention to the battery status to ensure that the battery is not depleted.
12. Power products inevitably generate electromagnetic fields during use, which may affect the normal operation of implanted medical devices or personal medical equipment, such as pacemakers, cochlear implants, hearing aids, defibrillators, etc. If these medical devices are used, please consult their manufacturers for restrictions on the use of related equipment to ensure that this product maintains a sufficient safe distance from implanted medical devices (such as pacemakers, cochlear implants, hearing aids, defibrillators, etc.) during operation.
13. When the power supply is connected to a refrigerator load in regular mode, it may automatically shut down due to the power fluctuation characteristics of some refrigerators. If the refrigerator stores drugs, vaccines, or other high-value items, it is recommended to monitor for any power outages after connection to ensure continuous power supply and avoid unnecessary losses.

3.1 Disposal

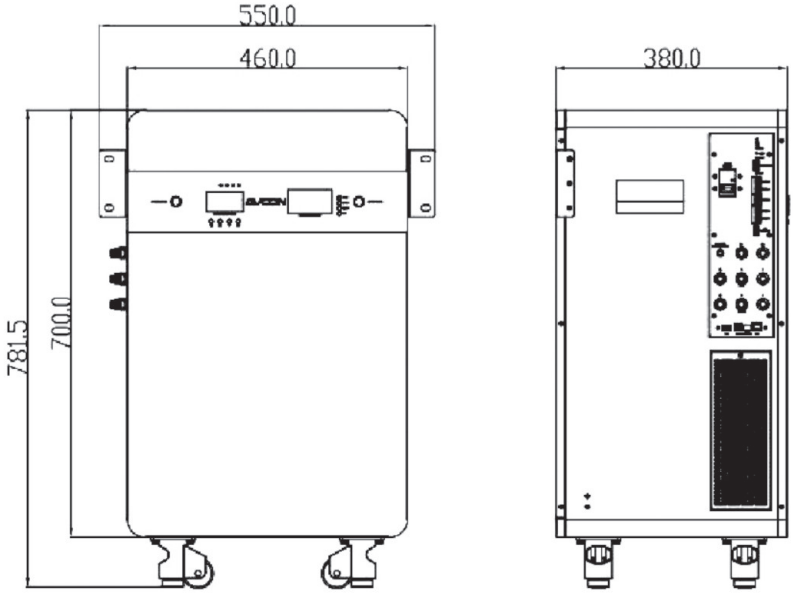
If conditions permit, please ensure that the battery of this product is fully discharged before placing the product in the designated battery recycling bin. This product contains a battery, which is a hazardous chemical. It is strictly prohibited to dispose of it in an ordinary garbage bin. For relevant details, please follow local laws and regulations on battery recycling and disposal.
If the battery cannot be fully discharged due to a fault in the product itself, please do not dispose of the battery directly in the battery recycling box. Instead, contact a professional battery recycling company for further processing.

4. Specification Parameters

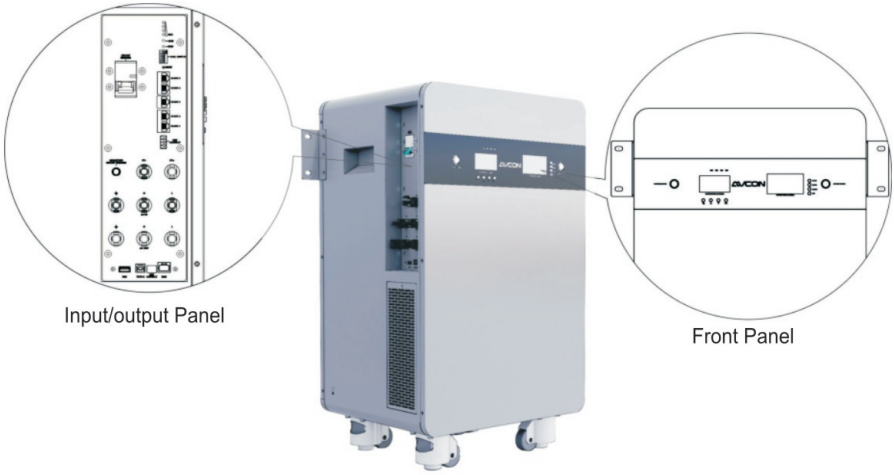
	project	parameter	remarks
basic parameter	model	YT-16KWH-5KW	
	rated power	16076.8Wh	
	Actual power	>16000Wh	
	cell chemistry system	lithium iron phosphate cell	
	rated voltage of battery	51.2V DC	Voltage range: 43.2 to 58.4V
	cell cycle count	≥5000	(25±2)℃/0.5P charge-discharge
	net weight	≈135 kg	
	size	H781.5*W550*D380mm	without backplane thickness
AC import	rated AC input voltage	230V AC±5%	
	AC input voltage range	170 ~ 280V AC	
	frequency range	50Hz or 60Hz	sinusoidal wave / automatic frequency detection
	load efficiency of municipal power bypass	>95%	Rated load/Full battery
	charging alternating current	22.7A (adjustable)	Maximum current: 40A
load output	output rating	5 KW	
	AC output voltage range	230VAC±5%	

	project	parameter	remarks
load output	output frequency	50Hz or 60Hz	pure sine wave
	maximum AC output current	24A	
	overload protection	102% < Load≤110%	Wait at least 1 minute, then alarm and turn off the output (using ambient temperature 0-40°C)
		110% < Load≤130%	Wait at least 10 seconds, then trigger the alarm and disable the output
		130% < Load≤150%	Wait at least 3 seconds, then trigger the alarm and disable the output
		Load > 150%	Minimum 200 milliseconds, then Alarm and turn off output
	bypass switching time	10ms	10ms (Typical value) UPS/APP mode
	no-load power consumption	< 60W	No load mode, battery disconnected
MPPT	MPPT maximum power	6000W	Route 1
	maximum input current	30A	Maximum Settable
	maximum open circuit voltage	500V DC	
	MPPT voltage range	120V ~ 430V DC	
	transfer efficiency	>95%	
else	humidity	Relative humidity ranging from 5% to 95%	
	charging temperature	0℃ ~ 55℃	
	discharge temperature	-10℃ ~ 55℃	
	storage temperature	-15℃ ~ 60℃	
	noise	≤60dB	Fan noise
	heat radiation	forced air cooling	
	Maximum concurrent connections	Parallel processing is not supported	

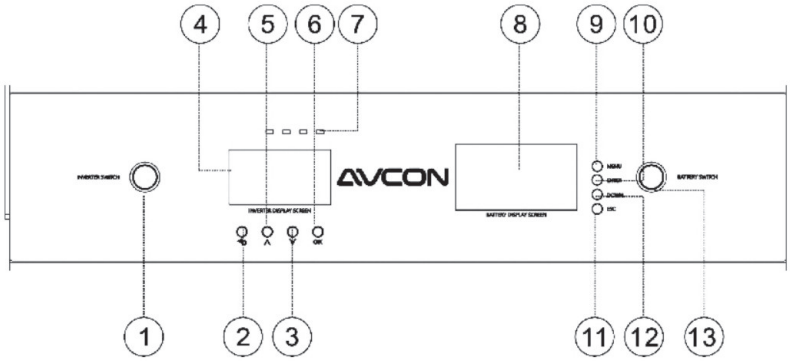
5. Appearance and dimensions



6. Definition of structural function

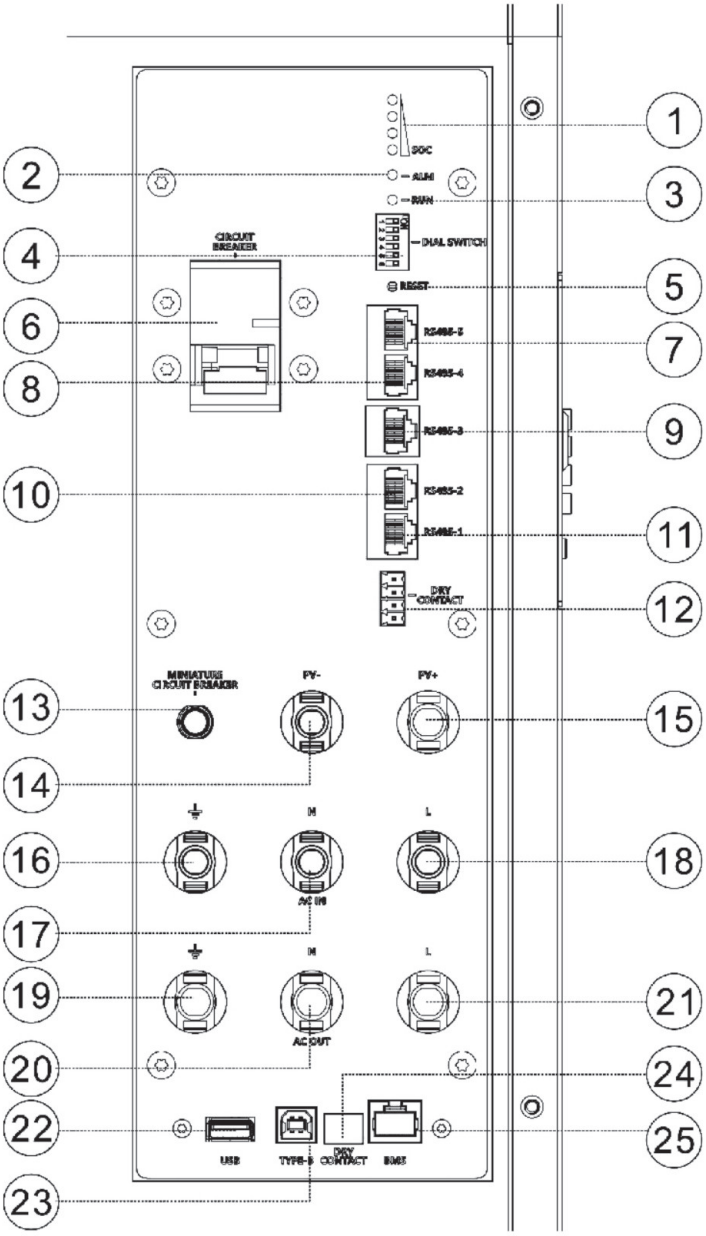


front panel



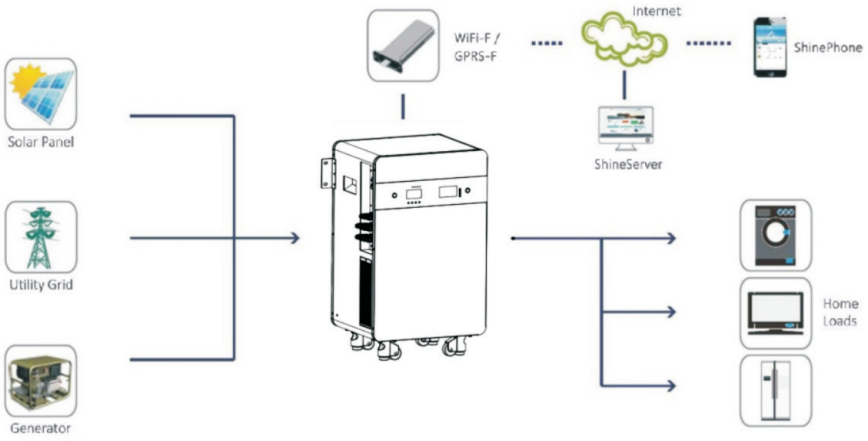
order number	silk-screen	explain	remarks
1	INVERTER SWITCH	inverter switch	INVERTER SWITCH
2	↩	Back button	↩
3	V	Down button	V
4	INVERTER DISPLAY SCREEN	Inverter display screen	/
5	∧	Up arrow key	∧
6	OK	Confirm button	OK
7	/	pilot lamp	/
8	BATTERY DISPLAY SCREEN	BMS display screen	/
9	MENU	Menu buttons	MENU
10	ENTER	Confirm button	ENTER
11	ESC	Cancel button	ESC
12	DOWN	Down button	DOWN
13	BATTERY SWITCH	BMS switch	BATTERY SWITCH

Input and output Panel



order number	silk-screen	explain	remarks
1	SOC	battery remaining indicator	
2	ALM	alarm indicator light	
3	RUN	run indicator	
4	DIAL SWITCH	dial switch	
5	RESET	Reset button	
6	CIRCUIT BREAKER	Battery switch	
7	RS485-5	RS485 interface	
8	RS485-4	RS485 interface	
9	RS485-3	RS485 interface	
10	RS485-2	RS485 interface	
11	RS485-1	RS485 interface	
12	DRY CONTACT	dry contact of inverter	
13	MINIATURE CIRCUIT BREAKER	circuit breaker	
14	PV-	negative input interface of photovoltaic	
15	PV+	photovoltaic input positive terminal	
16	AC IN PE	AC input PE interface	
17	AC IN N	AC input N port	
18	AC IN L	AC input L interface	
19	AC OUT PE	PE interface for AC output	
20	AC OUT N	AC output N port	
21	AC OUT L	AC output L interface	
22	USB	USB joggle	
23	TYPE-B	TYPE-B joggle	
24	DRY CONTACT	battery dry contact interface	
25	BMS	BMS Communication Network Port	

7. System Application Topology Diagram

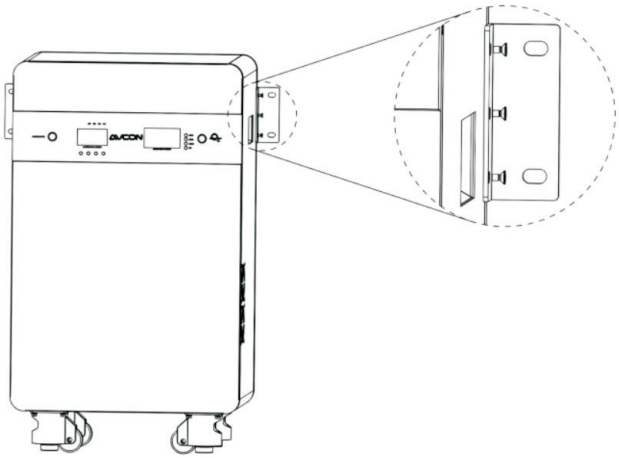


8. Installation Instructions

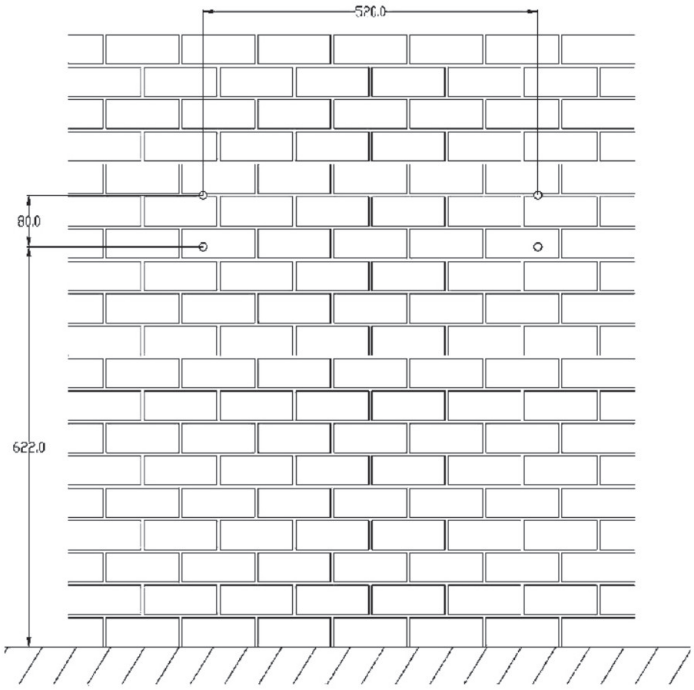
Warning

All wiring must be performed by professional operators.
Please note when placing:
A. Do not install this product near flammable building materials.
B. Place and secure it on a flat solid surface, preferably with the back against a wall.
C. Place this equipment in a shady and ventilated area.
D. The temperature of the equipment's working environment should be between 0-55°C.

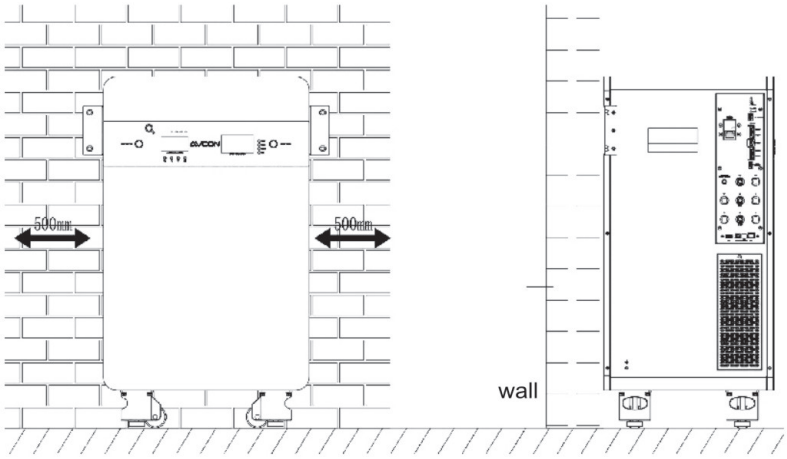
When this product is fixed in a certain place for use:
a. Take out the two fixed brackets attached to the box and use six M4*8 countersunk screws to fix the two fixed brackets to the outer box, as shown below (recommended torque:3N.m~3.5N.m);



b. Select the recommended Φ12 drill bit to drill 4 holes on the wall, with a depth of 80~90mm. Use a suitable hammer to install the expansion bolts in the holes, as shown in the following figure.



c. Fix the product on the wall, ensuring that the distance between the air inlets and outlets on both sides and any obstacles is greater than 500mm, as shown in the following figure: (Recommended torque: 10~10.5N.m)

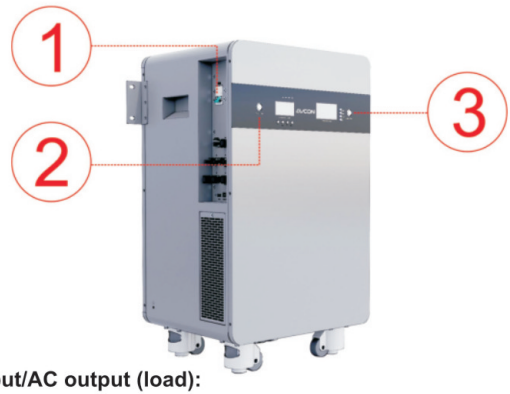


9. Connection Of Electrical Circuits

9.1 Preparation before wiring:

Attention! First, install the circuit breaker, then close it, and finally connect the product's circuit.

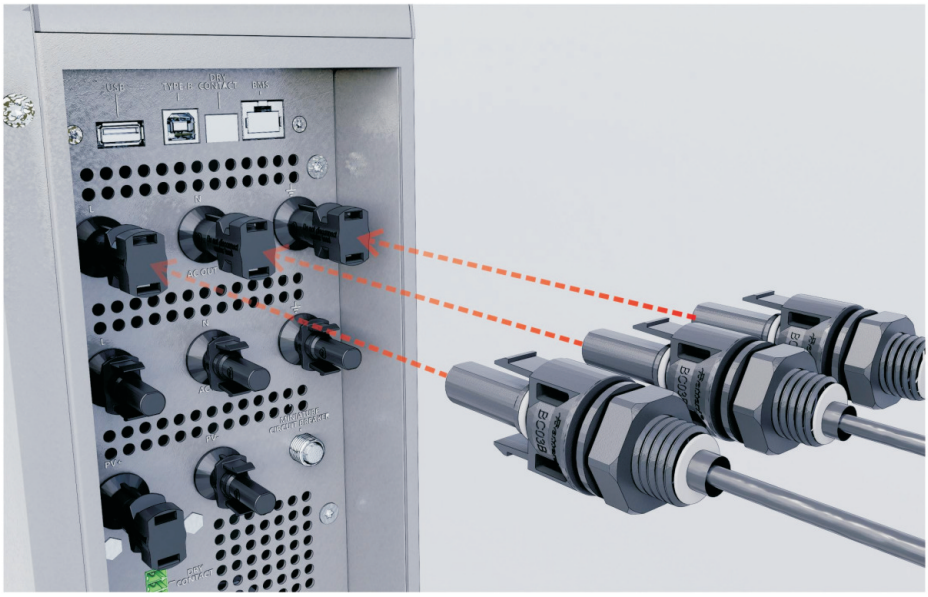
a. First, turn off the three switches indicated by ① ② ③ in the lower left image, and disconnect the protector or isolating switch of the external circuit to ensure that the connected wire circuit is not electrified.



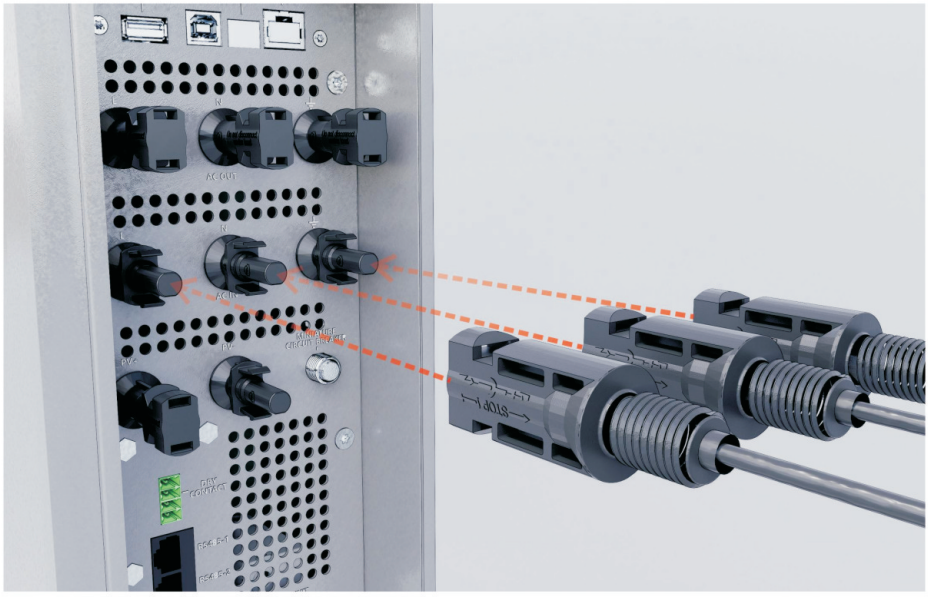
9.2. Connection of AC input/AC output (load):

a. Install AC circuit breaker:This wiring part is an AC circuit. Be sure toconnect the protective conductor wire first. ⏚.

b. Connect the AC output cable:Insert the AC output cord according to the polarity indicated on the power strip, as shown in the figure below:



c. Connect the AC input wires: Insert the AC input wires according to the polarity marked on the terminal block, as shown in the diagram below.



d. Confirm that the screws are tightened and the wire connections are secure.

Caution: Please check the markings on the input and output terminals carefully to avoid incorrect wiring!

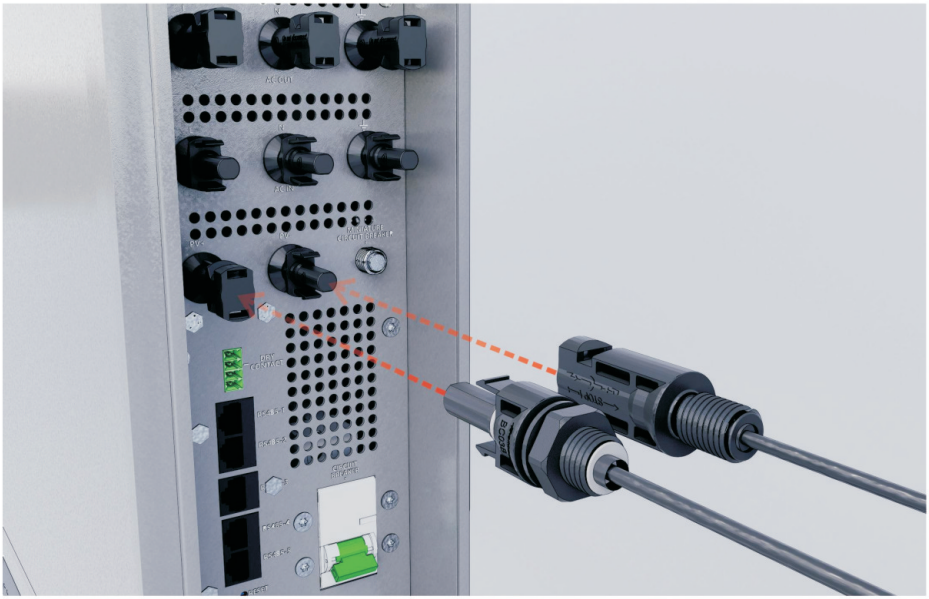
Wire Color Recommendations

Label	L	N	PE ⏚
Description	Live Wire	Neutral Wire	Ground Wire
Color	Red / Brown	Blue / Black	Yellow-Green

9.3 Connection of PV Circuits

a. Install the DC circuit breaker: PV power is direct current.

b. Connect the PV wires: Connect the positive terminal of the PV wire to the PV+ terminal of this product, and the negative terminal to the PV- terminal, as shown in the diagram below.



PV Module Matching

When selecting a suitable PV module, please be sure to consider the following parameters:

1.PV module voltage range (Voc): 120~430Vdc, maximum PV open-circuit voltage: 500V.

2.Maximum PV input current: 100A, maximum PV input power: 6000W.

Taking 620W and 550W PV panels as examples, after considering the above two parameters, the recommended module configuration is:

array mode	Panel count	Total input power of 620W	Total input power of 550W	Recommended copper wire specifications
least Array count	4 pieces	4 series * 1 parallel 2.48KW	4 series * 1 parallel 2.20KW	≥2.5mm²
5 string 1 parallel	5 pieces	3.66KW	2.75KW	≥2.5mm²
7-1 parallel	7 pieces	4.34KW	3.85KW	≥2.5mm²
8 bit 1 parallel 4 serial 2 parallel	8 pieces	4.96KW	4.4KW	≥2.5mm²
9 to 1 parallel 3 series 3 parallel	9 pieces	5.58KW	4.95KW	≥2.5mm²

Note: The PV input interface of the 5-in-1 power unit is 1 channel.

10. Description of Status Indicators and Display Buttons

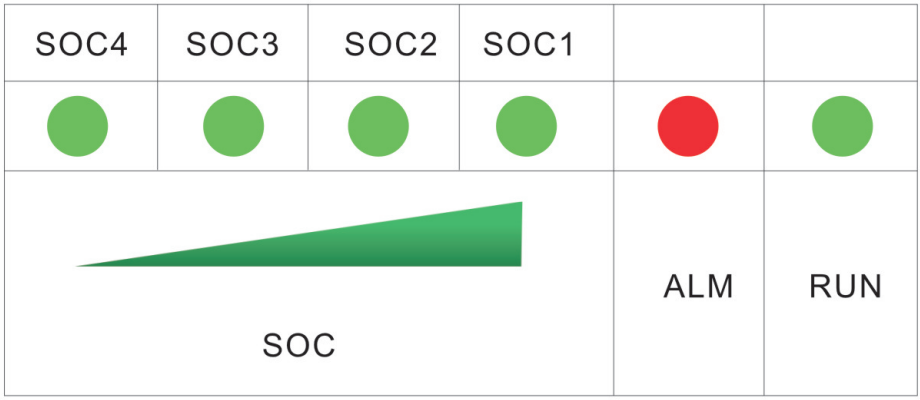
10. Description of Status Indicators and Display Buttons

10.1 Introduction to Status Indicators

10.1.1 Battery Pack Status Indicator

(1) Definition of Battery Pack LED Indicators:

LED Indicators: 4 green capacity indicators, 1 red alarm indicator, 1 green operation indicator.

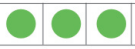


(2) Capacity Indication

Status	Charging				Discharging			
Capacity Indicators	SOC4	SOC3	SOC2	SOC1	SOC4	SOC3	SOC2	SOC1
0~25%	Flashes twice	off	off	off	Steady On	off	off	off
25~50%	Steady On	Flashes twice	off	off	Steady On	Steady On	off	off
50~75%	Steady On	Steady On	Flashes twice	off	Steady On	Steady On	Steady On	off
75~100%	Steady On	Steady On	Steady On	Flashes twice	Steady On	Steady On	Steady On	Steady On
Running Indicator	Steady On				Flashes three times			

(3) Status Indication

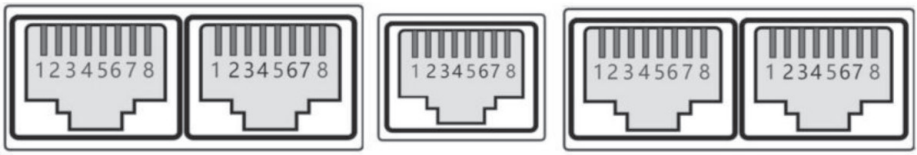
System Status	Abnormal Event	Battery Level LEDs	ALM	RUN	Remarks
Shutdown	Shutdown/Hibernation			All Off	
Standby	Normal		Off	Flashes once	Only normal and major alarms are active in standby mode. Protection and faults are reported as in charge/discharge status. Major alarms include: High differential pressure alarm, Low capacity alarm

System Status	Abnormal Event	Battery Level LEDs	ALM	RUN	Remarks
					
	Alarm	Based on battery level indication	Flash 2	Flash 1	Alarm: Cell voltage high/low, pack voltage high/low, all temperature alarms (cell/MOS/ambient high/low). ALM off during cell/pack overvoltage alarm
Charge	Normal	Based on battery level indication (highest indicator LEDflashes twice)	Off	Steady On	
	Alarm		Flash 2	Steady On	Alarm includes: high differential pressure, low capacity, cell voltage high/low, pack voltage high/low, all temperature alarms, overcurrent. ALM off during cell/pack overvoltage alarm
	Cell/Pack Overvoltage Protection / Full Charge Protection	Based on battery level indication	Off	Flash 2	
	Overcurrent Protection (Enter Current Limit)	Based on battery level indication (charge current timeout2)	Off	Steady On	After overcurrent protection: enter current-limited charging with normal charge current display; if no charge current, display as fault. ALM steady on, others off
	Temperature Protection	Off	Steady On	Off	Cell, MOS, ambient temperature protection
Discharge	Normal	Based on battery level indication	Off	Flash 3	
	Alarm		Flash 2	Flash 3	Alarm includes: high differential pressure, low capacity, cell voltage high/low, pack voltage high/low, all temperature alarms, overcurrent
	Cell/Pack Undervoltage Protection		Flash 2	Off	
	Overcurrent/ Short Circuit Protection	Off	Steady On	Off	
	Temperature Protection	Off	Steady On	Off	Cell, MOS, ambient temperature protection
Fault	NTC Fault, MOS Fault, Reverse Polarity, Differential Pressure Protection, Ultra-low Voltage Protection	Off	Steady On	Off	

(4) Flash Pattern Definition

Flash Mode	On Duration	Off Duration
Flash 1	0. 25S	3. 75S
Flash 2	05S	0. 5S
Flash 3	0. 5S	1. 5S

(5) Communication Port Definition
5.1 Port Diagram



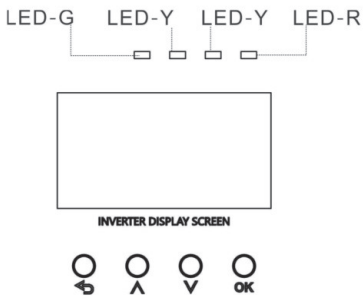
RS485A RS485C (Reserved) RS485B / Can

5.2 Communication Port Definition

Communication Port—For communication with upper-level devices. Can1 (reserved) is expandable for inverter communication			
RS485A-1—uses vertical RJ45 connectors		RS485A-2—uses 8P8C vertical RJ45 connector	
RJ45 pin	defined declaration	RJ45 pin	defined declaration
1、8	RS485-B	1、8	RS485-B
2、7	RS485-A	2、7	RS485-A
4	Can1-H (Reserved)	4	Can1-H (Reserved)
5	Can1-L (Reserved)	5	Can1-L (Reserved)
6	GND	6	GND

Parallel Communication Port (RS485 for parallel use only)—Can0 defaults to inverter communication			
RS485-2—uses vertical RJ45 connectors		RS485-2—uses 8P8C vertical RJ45 connector	
RJ45 pin	defined declaration	RJ45 pin	defined declaration
1、8	RS485-B2	1、8	RS485-B2
2、7	RS485-A2	2、7	RS485-A2
4	Can0-H	4	Can0-H
5	Can0-L	5	Can0-L
6	GND	6	GND

10.1.2 Inverter Status Indicator
(1) Inverter LED Indicator Definition



pilot lamp	name	explain
LED-G	Input light (green)	Light: The mains power is normal and the system has switched to mains operation. Flash: The mains power is normal, but the system has not switched to mains operation. Power outage: abnormal mains electricity
LED-Y	Inverter lamp (yellow)	Light: The machine operates in battery mode output Extinction: Other states
LED-Y	Battery light (yellow)	Bright: Battery in float charge Flash: Battery Charging at Constant Voltage Extinction: Other states
LED-R	guard lamp (red)	Bright: Inverter fault Flash: The inverter has an alarm. Disconnection: Inverter normal

10.2 Inverter & Battery Pack: Key Functions

(1) Introduction to Inverter Display Screen Button Functions

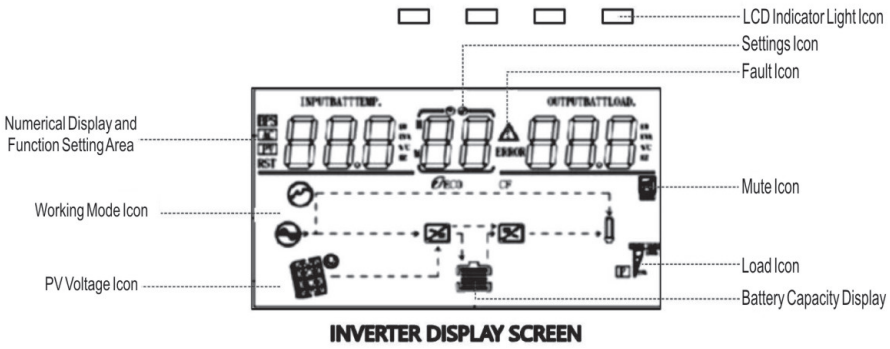
silk-screen	function	description
↩	return	Return/Exit or enter Settings mode
∧	upturning	Add a setting to the top
∨	Flip down	Jump to next setting
OK	affirm	Confirm selection

(2) Introduction to Battery Management Display Key Functions

silk-screen	function	description
MENU	menu	Go to Settings
ENTER	affirm	Confirm selection
DOWN	Flip down	Jump to next setting
ESC	Flip up/Exit	Go to the parent directory

10.3. Inverter & Battery Pack LCD Display Introduction

(1) Inverter display screen



INVERTER DISPLAY SCREEN

key	Function Description of Inverter Key
Function Settings/Confirm Key	Function Settings: Press the OK key on the display page for more than 2 seconds to open the settings page ∧. In the ∨ settings interface, use the up/down arrow keys to navigate and select the desired settings. Confirm: On the settings page, press OK for 0.1 to 2 seconds to confirm the settings.
Page/Query Key	Page turn: Press the key or ∧ hold it ∨ for 0.1 second or longer to turn the page left or right.
eject key	Exit: After confirming the settings in the function settings ↩ interface, press and hold the key for 0.1 to 2 seconds to return to the main interface.

LCD display can be divided into three sections: icon display, numerical display, and function setting area, as well as working mode display area.

A.Icons show:

1. Load and Battery Graph: The graph displays load and battery capacity, with each square representing 25% of the capacity. The load icon flashes when the inverter is overloaded, while the battery icon flashes when the battery is undercharged or disconnected.
2. The buzzer icon indicates whether the buzzer is muted. Under normal conditions, this icon is not displayed. In any mode, the background software sets MUTE.
   ON: The inverter enters silent mode, and the buzzer prohibition icon will appear.
3. The settings icon will light up when you enter the settings menu, but it will not display in other cases.
4. The fault icon is only displayed in fault mode and not in other conditions.

B.Number display and function settings:

1. In non-functional mode, this section displays inverter-related information. Normal mode shows output ∧data∨. Press the up/∧down query keys (or the key) (three-press key: key) to view input/output voltage, input/output frequency, battery voltage/current, PV voltage/current, PV voltage/power, output power/voltage, apparent power/voltage, load percentage/voltage, software version, and other relevant information. Fault mode displays fault codes.
2. On the function settings page, you can configure parameters like output voltage (OPU) and battery low-voltage shutdown threshold (EOd) using the function settings key and the up/down navigation keys.

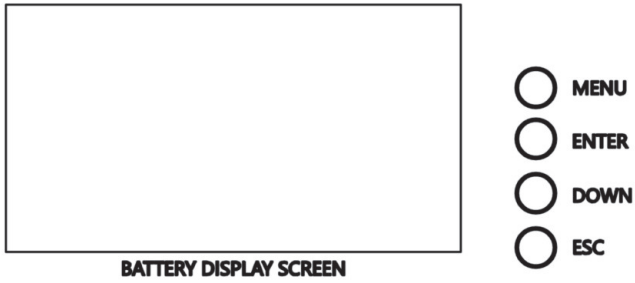
C.Work mode display area:

After 4 seconds of startup, this display area shows the inverter's operating modes, such as standby, mains, battery, and fault modes.

D. Table of Inverter Operating States Corresponding to the Beezer

The long beep lasts for ten seconds before stopping.	fault-pattern
Sounding for three seconds before stopping	PV voltage or input voltage loss or recovery
	Turn the main power switch on or off
One second, one click, stop after one minute	All other alarms (the low battery alarm only sounds in battery mode)

(2) Battery pack display screen



Button Description: The battery pack has four buttons.

The key sequence from top to bottom is: Menu key, Confirm key, Down Select key, Exit key.

»: Indicates a submenu. Press ENTER to enter the submenu.

MENU	Press the menu key to enter the management system
ENTER	Confirm key. Press this key to enter the submenu.
DOWN	Select the key below. Pressing this key moves the cursor down or flips the page.
ESC	Exit key: Press this key to return to the previous menu

11. Parameter Query and Settings

1.1 Parameter Query

11.1.1 Inverter Parameter Inquiry

The display interface normally consists of ten pages. ∧Press ∨the query key or OK key (screen) for ∧ 0.2 to ∨ 1 second (or the key (screen)) to navigate between pages, displaying information such as input/output voltage, input/output frequency, battery status, PV voltage/current, load, and software version. Alarm notifications will expand to a dedicated page, while inverter failures will automatically display a fault code page. The main page defaults to fault/alarm alerts, but when no faults or alarms are detected, it shows output voltage and frequency data by default.

Press ∧the ∨key (key screen) for over 1 second to activate the LCD's polling mode, which automatically ∧ ∨ refreshes the display every 2 seconds. Long-press the key again to exit the polling mode.

Display page 1 (main display page): Shows the inverter's input and output voltages, as shown in Figure 1-3.

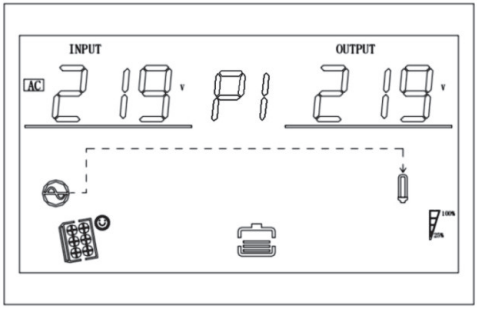


Figure 1-3 shows page one

Display page 2: shows the inverter's input and output frequencies, as shown in Figure 1-4

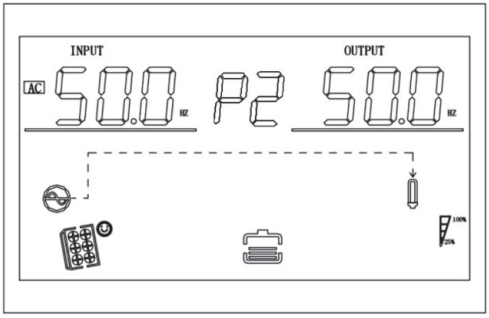


Figure 1-4 shows page 2

Display page 3: Battery information, showing battery voltage and charging current, as shown in Figure 1-5

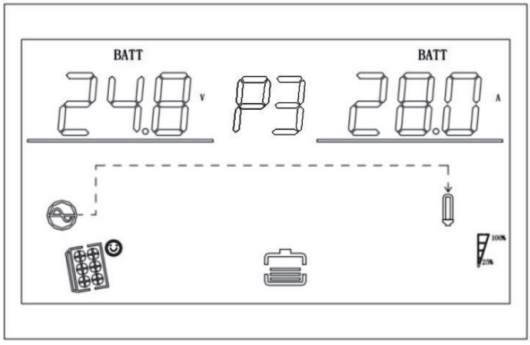


Figure 1-5 shows page three

Display page 4: PV information, showing PV voltage and PV charging current, as shown in Figure 1-6

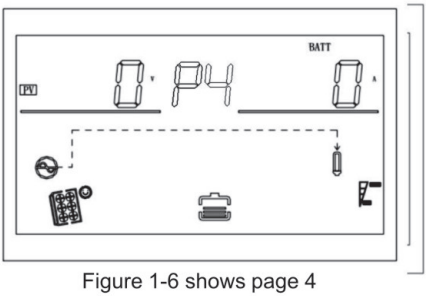


Figure 1-6 shows page 4

Display page 5: PV information, showing PV voltage and PV power, as shown in Figure 1-7

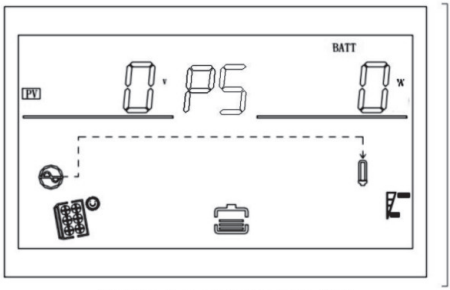


Figure 1-7 shows page five

Display page 6: Output information, showing the output voltage and active power, as shown in Figure 1-8.

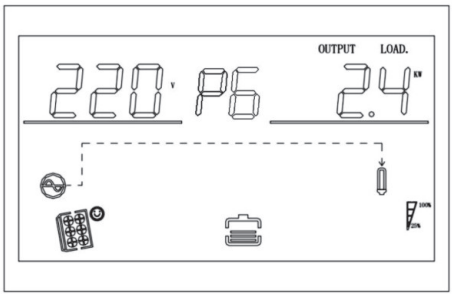


Figure 1-8 shows page six

Display page 7: Output information, showing the output voltage and complex power, as shown in Figure 1-9.

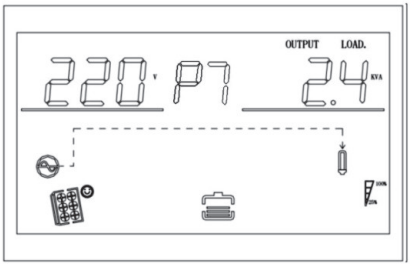


Figure 1-9 shows page seven

Display page 8: Output information, showing the output voltage and load percentage, as shown in Figure 1-10.

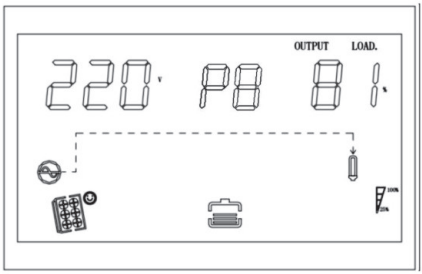


Figure 1-10 shows page 8

Display page 9: Software version, showing the inverter system software version as shown in Figure 1-11.

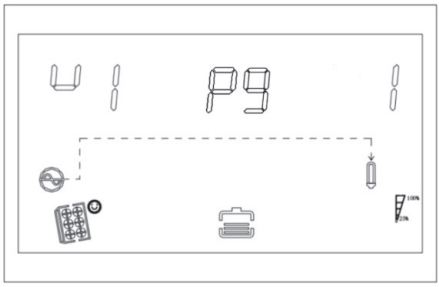


Figure 1-11 shows page nine

Display page 10: Software version. Shows the MPPT system software version (Figure 1-12) and displays total and daily photovoltaic power generation (Figure 1-13).

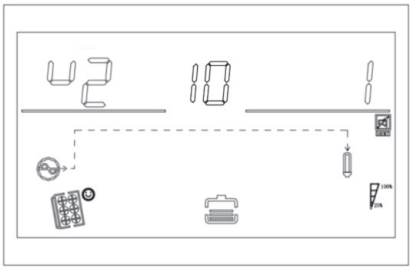


Figure 1-12 shows page ten (software version)

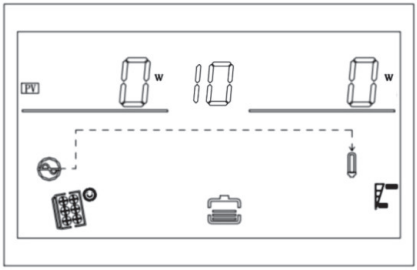


Figure 1-13 shows page 10 (Photovoltaic Power)

Display page eleven: Parallel operation status. As shown in Figure 1-14.

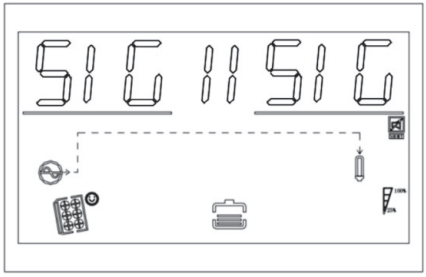


Figure 1-14 shows page eleven (parallel state)

Display page twelve: lithium battery string status. When the upper right shows SIG constant, the battery pack operates in single string mode. When PAR constant is displayed, the battery pack runs in parallel multi-string mode. When PAR flashes, the battery pack is establishing parallel multi-string mode.

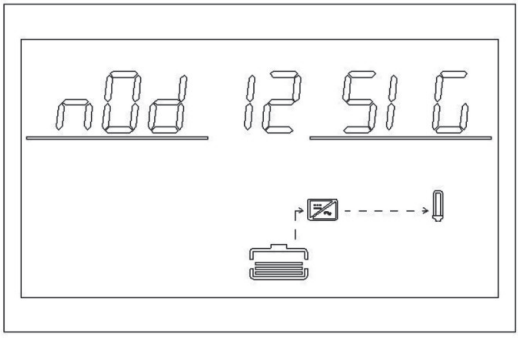


Figure 1-14 displays page twelve (Lithium battery pack network status)

Display page 13: Battery voltage and current information for lithium batteries. The upper left shows BMS battery voltage data, while the upper right displays BMS battery current data. When BMS communication fails, both the upper left and upper right displays ERR with flashing lights.

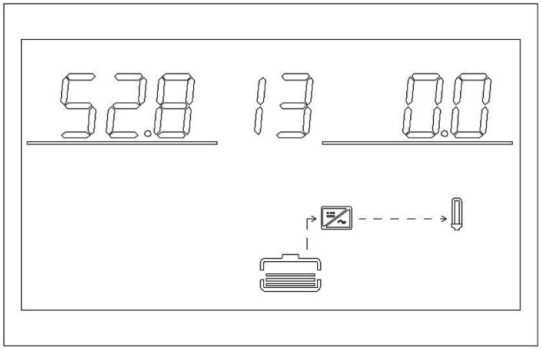


Figure 1-15 displays page thirteen (Lithium battery voltage and current information)

Display page 14: Battery temperature and SOC for lithium batteries. The upper left displays BMS temperature data, while the upper right shows BMS SOC data. When BMS communication fails, both the upper left and upper right sections display a flashing ERR indicator.

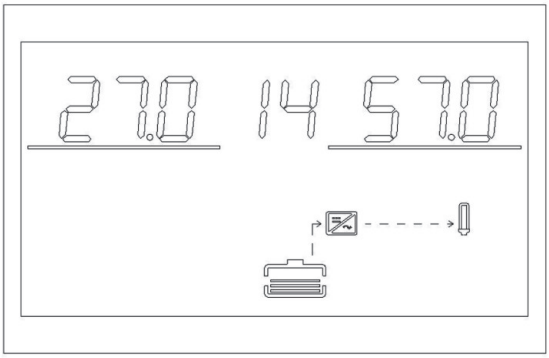


Figure 1-16 displays page 14 (Lithium battery temperature and SOC information)

Display page 15: Lithium battery capacity. The top-left shows rated capacity, while the top-right displays current capacity. When BMS communication fails, both the top-left and top-right sections display a flashing ERR.

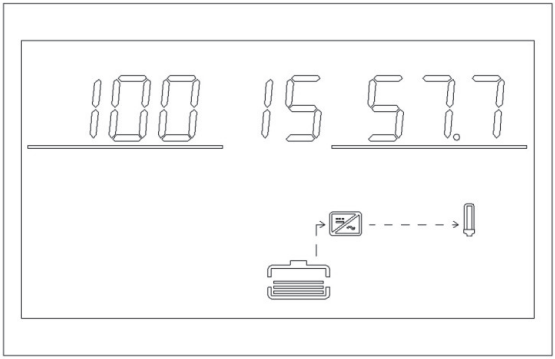


Figure 1-17 displays page fifteen (Lithium battery capacity information)

Display page 16: Lithium battery constant voltage point. The upper left shows the fixed letter CV, while the upper right displays the BMS constant voltage charging point. When BMS communication fails, the upper right displays a flashing ERR.

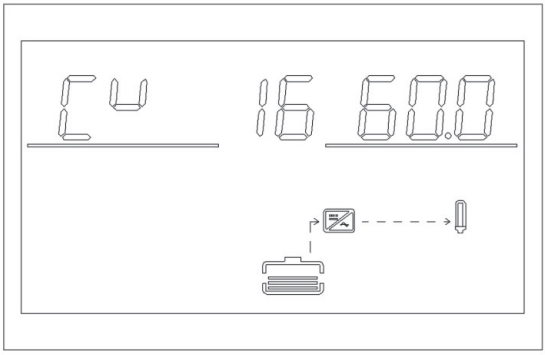


Figure 1-18 displays page sixteen (constant voltage information for lithium battery cells)

Display page 17: Lithium battery fault alarm information. The upper left displays BMS alarm information, while the upper right shows BMS fault information. When BMS communication fails, both the upper left and upper right display a flashing ERR.

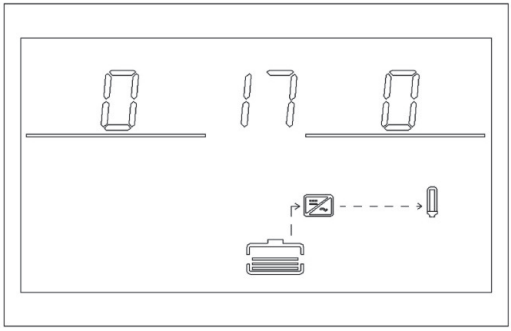


Figure 1-19 displays page 17 (Lithium battery fault alarm information)

11.1.2 Battery Pack Parameter Inquiry

(1) Key function description:

MENU: Press this key to enter the management system

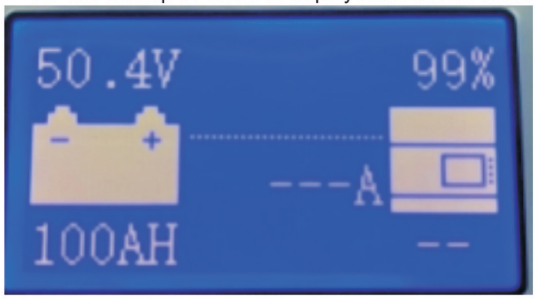
ENTER: Confirm key. Press this key to enter the sub menu.

DOWN: The down arrow key moves the cursor down or flips the page.

ESC: Exit key. Press this key to return to the previous menu.

(2) Display parameter query:

1.1 The startup interface is displayed as shown in the figure:

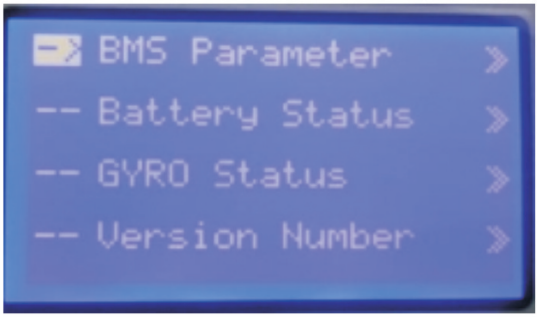


Total voltage, SOC, current A, full charge capacity

Pack protection status: None (Protection methods: OV: Overvoltage protection, LV: Undervoltage protection)

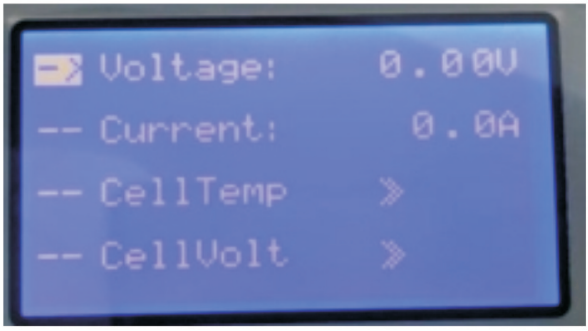
OT: High Temperature Protection, LT: Low Temperature Protection, OC: Overcurrent Protection, SC: Short Circuit Protection

1.2 Press MENU to access the main menu, as shown in the figure:



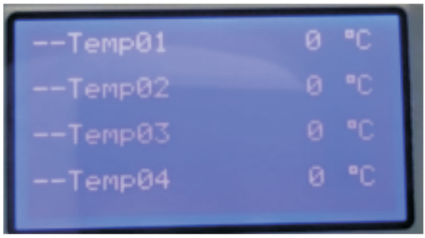
Show content	Explanation
--BMS Parameter 》	BMS parameters
--Battery Status 》	--> Battery status
--GYRO Status》	Gyro state
--Version numbe 》	--> version number

1.3 Move the cursor to "BMS Parameter", press ENTER to proceed, as shown in the figure:



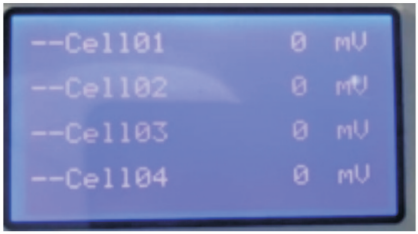
Show content	Explanation
-Voltage:	Total voltage: 0.00V
--Current:	Current current: 0.0A
--Cell Temp 》	--> Battery temperature
--Cell Vole 》	Battery Voltage

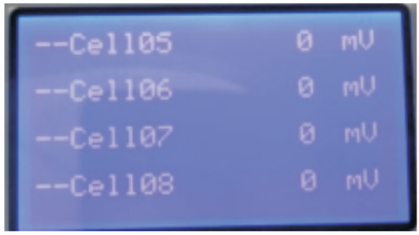
1.4 Move the cursor to "Cell Temp", press ENTER to confirm and access battery temperature data, then press "DOWN" to navigate to the next page, as shown in the figure:

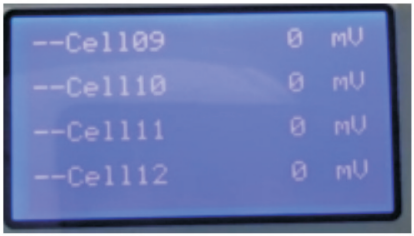


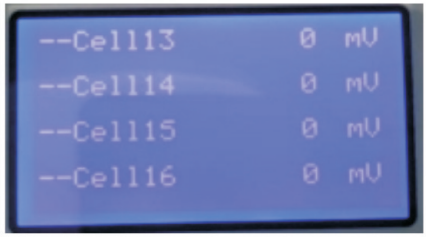
Show content	Explanation
--Temp01:xx℃	--> temperature 01
--Temp02:xx℃	--> temperature 02
--Temp03:xx℃	--> temperature 03
--Temp04:xx℃	--> temperature 04
--MOS Temp:xx℃	-->MOS temperature
--Env Temp:xx℃	--> ambient temperature

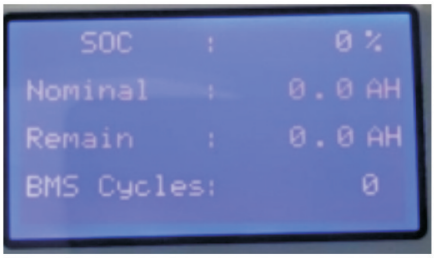
1.5 Move the cursor to "Cell Volt", press ENTER to confirm and access battery voltage data, then press "DOWN" to navigate to the next page, as shown in the figure:









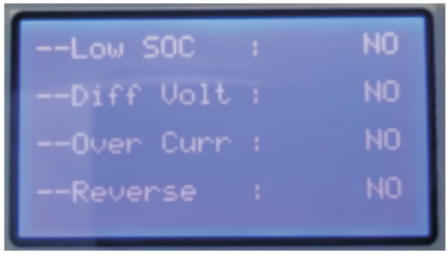


Show content	Explanation
--Cell01: xxxxmV	--> Voltage 01:
--Cell02: xxxxmV	--> Voltage 02:
--Cell03: xxxxmV	--> Voltage 03:
--Cell04: xxxxmV	--> Voltage 04:
--Cell05: xxxxmV	--> Voltage 05:
--Cell06: xxxxmV	->-> Voltage 06:
--Cell07: xxxxmV	-->-> Voltage 07:
--Cell08: xxxxmV	->-> Voltage 08:
--Cell09: xxxxmV	->-> Voltage 09:
--Cell10: xxxxmV	->-> Voltage 10:
--Cell11: xxxxmV	->-> Voltage 11:
--Cell12: xxxxmV	->-> Voltage 12:
--Cell13: xxxxmV	->-> Voltage 13:
--Cell14: xxxxmV	->-> Voltage 14:
--Cell15: xxxxmV	->-> Voltage 15:
--Cell16: xxxxmV	->-> Voltage 16:
-SOC: --Nominal:	-->SOC capacity --> nominal capacity
--Remain:	Set remaining capacity
--BMS Cycles:	BMS cycles

1.6 Move the cursor to "Battery Status", press ENTER to confirm and access battery status information, then press "DOWN" to navigate pages, as shown in the figure:

Show content	Explanation
--Status: (IDLE/DISCHG/CHARGE/FULL)	Status (idle, charging, discharging, full)
--Alarm Status: 》	--> alarm status
--Protect Status: 》	--> protect status
--Failure Alarm: 》	Fault Alert

1.7 Move the cursor to "Alarm Status", press ENTER to confirm and access the battery alarm information, then press "DOWN" to navigate to the next page, as shown in the figure:

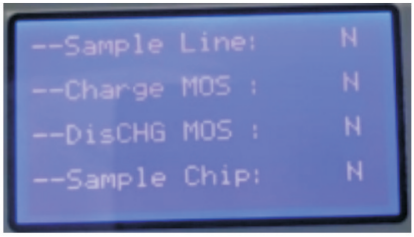


Show content	Explanation
-- Over Volt YES/NO	--> Overvoltage alarm Yes/No
-- Low Volt YES/NO	--> Low pressure alarm Yes/No
-- Over Temp YES/NO	--> Overtemperature alarm Yes/No
-- Low Temp YES/NO	--> Low temperature alert Yes/No
-- Low SOC YES/NO	Capacity alert Yes/No
-- Diff Volt YES/NO	Pressure differential alarm Yes/No
-- Over Curr YES/NO	--> Overcurrent alarm Yes/No
-- Reverse YES/NO	Reverse connection alarm Yes/No

1.8 Move the cursor to "Protect Status", press ENTER to confirm and access battery protection information, then press "DOWN" to navigate pages, as shown in the figure:

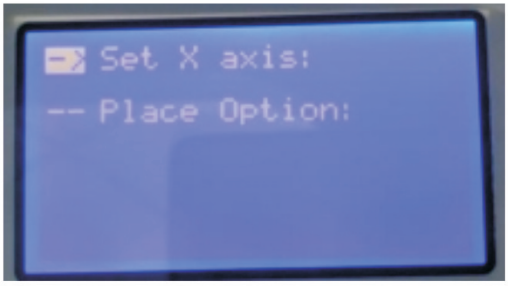
Show content	Explanation
-- Over Volt YES/NO	Overvoltage protection Yes/No
-- Low Volt YES/NO	--> Overvoltage protection Yes/No
-- Over Temp YES/NO	--> Overheat protection Yes/No
-- Low Temp YES/NO	--> Low-temperature protection Yes/No
-- Over Cur YES/NO	--> Overcurrent protection Yes/No
-- Short Cur YES/NO	Short-circuit protection Yes/No

1.9 Move the cursor to "Failure Alarm", press ENTER to confirm and access battery fault information, then press "DOWN" to navigate pages, as shown in the figure:



Show content	Explanation
--Sample Line(N/Y)	Sampling line breakage (NO/Yes)
--Charge MOS (N/Y)	MOS charging fault (NO/Yes)
--Dis CHG MOS(N/Y)	MOS discharge fault (NO/Yes)
--Sample Chip(N/Y)	--> AFE front-end cell fault (cell voltage excessively high/low) (NO/Yes)
--SC Times	Short-circuit protection count
--Over Temp CNT	Temperature protection count
--Over Cur CNT	Overcurrent protection count
--OVER Chg CNT	Overvoltage protection count
--Over Dchg CNT	Number of under-voltage protection events

1.10 Move the cursor to "GYRO Status", press ENTER to confirm and access the gyroscope information, then press "DOWN" to flip the view, as shown in the figure:



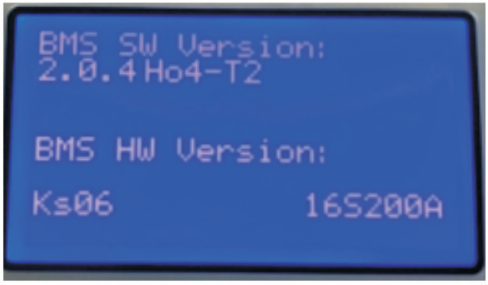
Show content	Explanation
--Set X axis	Set the X and Y axis directions
--Place Option	Set horizontal and vertical orientations

Note: This gyroscope setting is optional

1.11 Move the cursor to "Version number", press ENTER to confirm and access version details, then press "DOWN" to flip the selection, as shown in the figure:

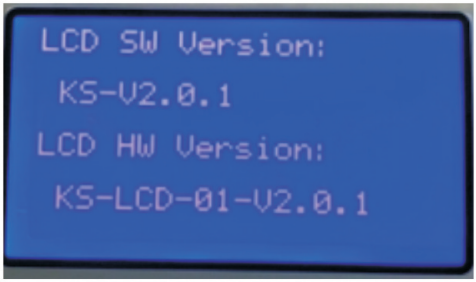
Show content	Explanation
--BMS Version 》	BMS Version Information
--LCD Version 》	-->LCD version information

1.12 Move the cursor to "BMS Version" and press ENTER to confirm access to the BMS version information, as shown in the figure:



Show content	Explanation
--BMS SW Version:	BMS software version
--BMS HW Version:	BMS Hardware Version

1.13 Move the cursor to "LCD Version" and press ENTER to confirm. The LCD version information will appear as shown in the figure:



Show content	Explanation
--LCD SW Version:	-->LCD software version
--LCD HW Version:	-->LCD Hardware Version

2) Sleeping/shutdown

When the system is in normal operation, it will enter sleep/shutdown mode after 1 minute without button operation. In shutdown/sleep mode, pressing any button will activate the display.

11.2 Function Settings

(1) Inverter function configuration:

To go to the exit feature settings page and perform specific operations, follow these steps:

1） Press the OK function setting key for more than 2 seconds to enter the ∧function ∨ setting page. Press the query key or key 0.1 to 2 seconds to select the function. When you scroll to the desired function setting page, the corresponding function name will flash.

2） Press the OK key for 0.1 to 2 seconds to enter the settings page for the selected function. The function name will remain lit, and a value ∧will ∨flash to the left of it. Press the Query key or the key for 0.1 to 2 seconds to select the required function parameter value.

3） Turn to the desired function parameter, then press the OK key for 0.1 to 2 seconds to confirm the settings. The parameter value will then remain lit without blinking.

Press ⮌ the key for 0.1 to 2 seconds or longer to complete the function setup. The setup page will then close, and you will return to the main display page (or you can wait up to 30 seconds for automatic return).

11.2.1 Output Voltage (OPU)

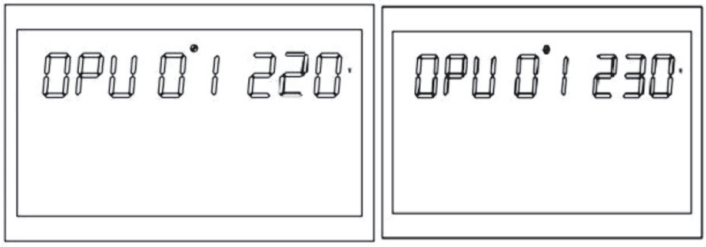


Figure 1-12 Output Voltage Settings Page

(1) The output voltage defaults to 230V, with adjustable settings for 208V,220V,230V, and 240V. All configurations are valid across all operating conditions and take effect immediately.

(2) Press the OK function setting key for over 2 seconds to access the settings ∧ page. Press ∨ the query key (number 0 or 1) for 0.1-2 seconds to select the function. Scroll to the output voltage OPU settings page, where the OPU text will flash.

(3) Press the OK key for 0.1 to 2 seconds to access the output voltage (OPU) settings page. The "OPU" text will remain illuminated, with the corresponding ∨ ∧ voltage value displayed in a blinking format to the right. Press the query key or the 0.1-2 second key to select an output voltage (208V,220V,230V, or 240V). The system defaults to 230V, and all settings will be saved immediately.

(4) After flipping to the desired output voltage value, press the OK key for 0.1 to 2 seconds to confirm the OPU output voltage setting. The value to the right of the OPU will then remain lit without blinking.

(5) Hold the ⮌ key for 0.1 to 2 seconds or longer to complete the function setup. The system will then exit the settings page and return to the main display (or you may wait 30 seconds for automatic return). Note: When the output voltage is set to 208V, the output must be reduced to 90% of the rated value.

11.2.1 Other Function Settings

11.2.1 Output Power Factor (OPF) Output frequency settings, default 50Hz.

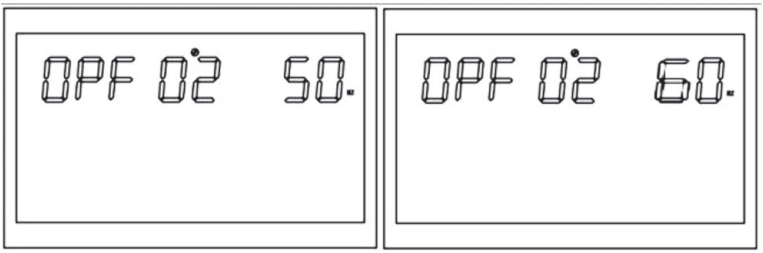


Figure 1-13 Output frequency settings page

11.2.1 Output Power Factor (OPF) Output frequency settings, default 50Hz.
Function description: Set the inverter output frequency. You can choose between 50Hz and 60Hz, with 50Hz as the default.
Settings: You can set standby or mains power mode. The settings take effect immediately. When switching back to battery mode, the frequency will change at a slower rate.

11.2.2 Output Priority Settings (OPP)

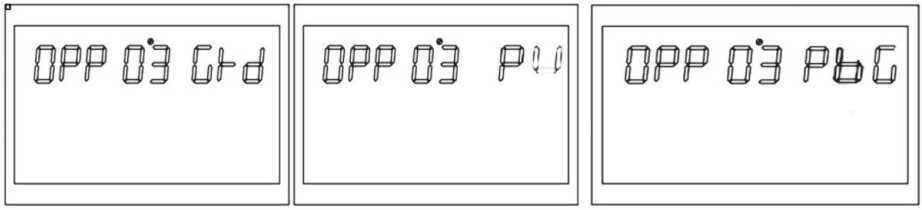


Figure 1-14: Output Priority Settings Page

Description: Configures the inverter's output priority.
Set conditions: All statuses can be set and take effect immediately.
Note: Three output priority options are available, with GRD as the default: mains power output first; PV (Photovoltaic) output second; and PBG (Photovoltaic Battery) output third.

11.2.3 Output Mode (MOD)

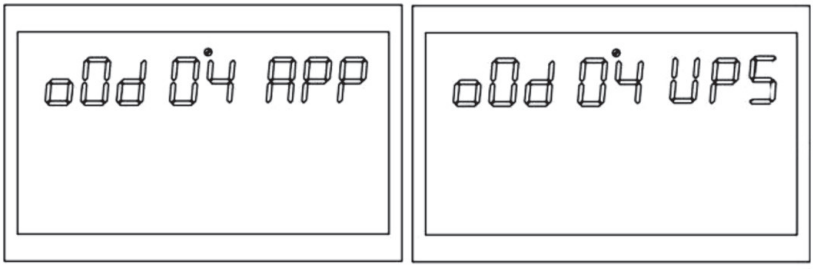


Figure 1-15: Output Mode Settings Page

Description: Configures the inverter's output mode.

Set conditions: All statuses can be set and take effect immediately.

Note: AC output mode offers two primary options. The default is APP:Appliance, designed for home appliances, while the second is UPS mode for computers and similar devices. The typical switching time is 10ms.

11.2.4 Charging Priority (CHP)

Figure 1-16 Charging Priority Settings Page

Function description: Set the inverter charging priority.
Set conditions: All statuses can be set and take effect immediately.

Note: There are four charging priority options. The default is PNG (PV and Grid): charging both PV and Grid. The second is OPV (Only PV): charging only PV. The third is GRD (Grid): charging from the mains is preferred. The fourth is PV: PV charging is preferred.

11.2.5 mains charging current (RCC)

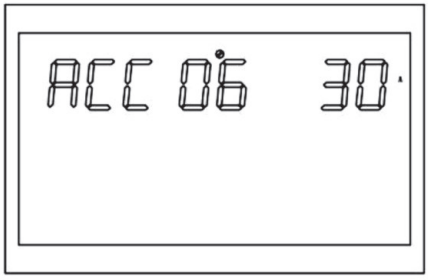


Figure 1-17: Maximum Charging Settings for City Power

Function description: Set the maximum charging current for the inverter's mains power.
Set conditions: All statuses can be set.

explain：

RCC: Grid Charge Current. The default setting is 30A, with a range of [2,80A].

11.2.6 Maximum Charging Current (MCC)

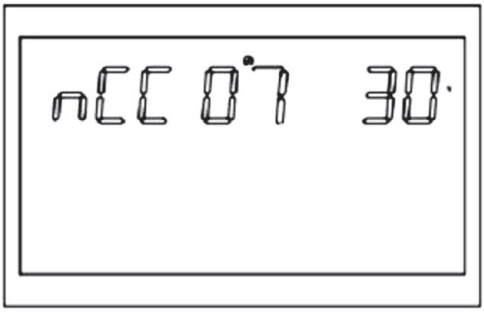


Figure 1-18: Maximum Charging Current Settings Page

Function description: Set the maximum charging
current of the inverter. Setting conditions: All states
can be set.

explain：

MCC (Maximum Charge Current) refers to the maximum current values for both PV and mains power charging.

Version: 2/10/20/30/40/50/60/70/80A is available;

11.2.7 Menu Default (MDF)

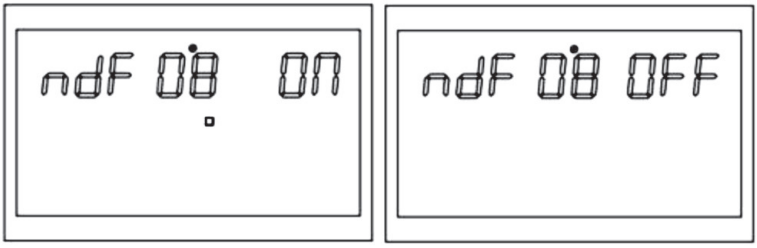


Figure 1-19: Return to the main page settings

Function description: Returns the main interface settings.
Set conditions: All statuses can be set.

explain：

The default setting is ON. When configuring the function, if set to ON, the page will not be on the home screen (P1) and will return to the home screen after 1 minute. If set to OFF, the LCD will remain on this screen if the page is not on the home screen (P1).

11.2.8 Overload Restart (LrS)

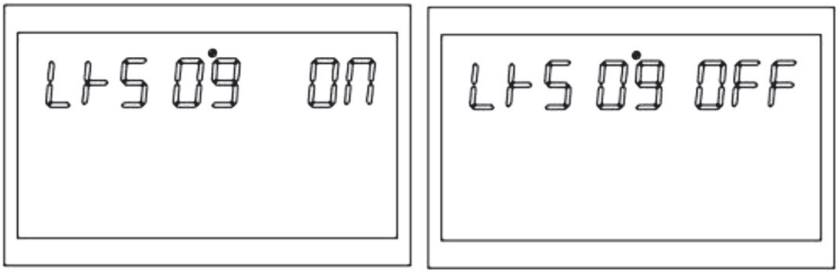


Figure 1-20 Overload Restart Settings Page

Function description: Overload restart setting.
Set conditions: All statuses can be set.

Note: The default setting for rebooting due to overload is ON.

11.2.9 Overtemperature Restart (TrS)

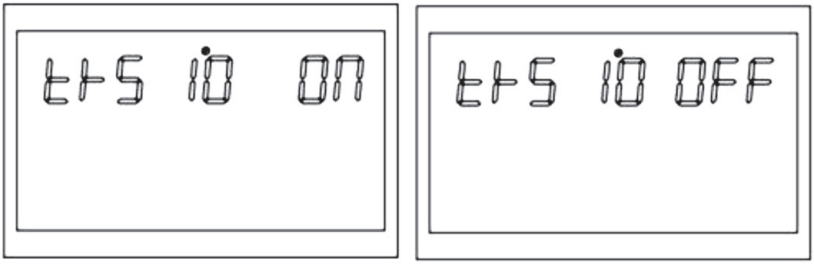


Figure 1-21 Overtemperature Restart Settings Page

Function description: Overtemperature restart setting.
Set conditions: All statuses can be set.
Note: The default setting for overheating restart is ON.

11.2.10 Main Input Power Loss Alarm (MIP)

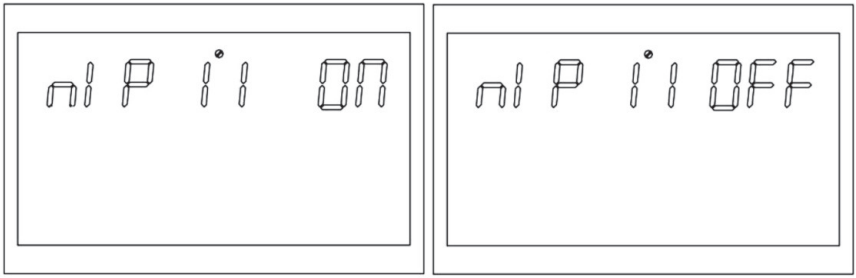


Figure 1-22 Main Input Power Loss Alarm Settings Page

Function description: Alarm setting for prolonged operation when mains power or PV is lost.
Settings: All states can be configured. By default, the alarm will sound for a period when mains power or PV is lost. You can set it to OFF. (All modes are configurable)

explain：

MIP:Main Input cut warning

The default setting is ON. If the main input is lost, the buzzer will sound continuously for 3 seconds. When set to OFF, the buzzer will not sound continuously if the main input is lost.

11.2.11 Energy-saving Mode (PWS)

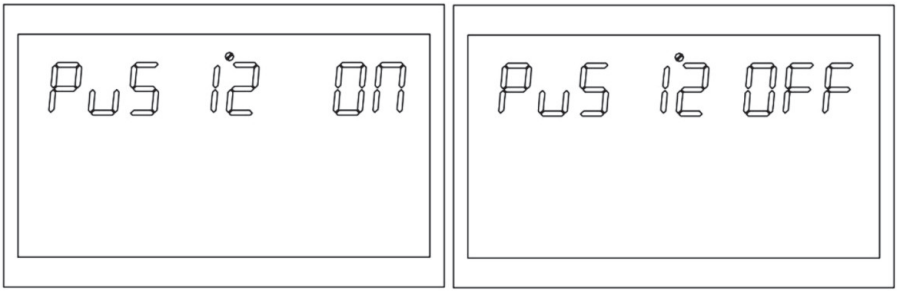


Figure 1-23 Energy-saving Mode Settings Page

Feature description: Set whether the inverter is in low-power mode (energy-saving mode).
Set conditions: You can set them in single-machine mode.

explain：

PWS:Power Saving
The default setting is OFF, and the function is not enabled. When set to ON, in battery mode, if the load is below 25W, the system will briefly stop output before resuming. If the load exceeds 35W, the system will resume normal output.

11.2.12 Overload to Bypass (OLG)

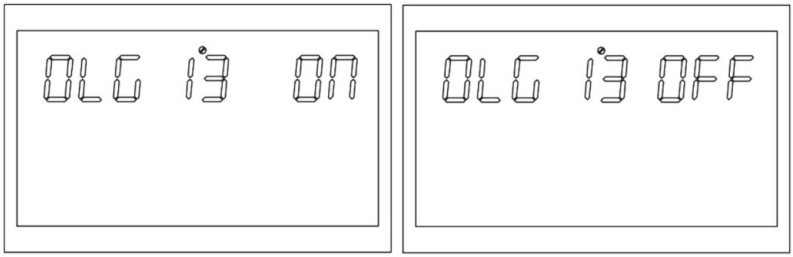


Figure 1-24 Overload Bypass Settings Page

Function description: When the battery mode is overloaded, set whether to immediately switch to mains power mode (also known as bypass mode).
Set conditions: All statuses can be set.

explain：

OLG:Overload to Bypass
The default setting is OFF, which disables the function. When set to ON, if the PV system is overloaded while outputting under load, the system will immediately switch to bypass mode (using mains power output).

11.2.13 Mute Settings (MUE)

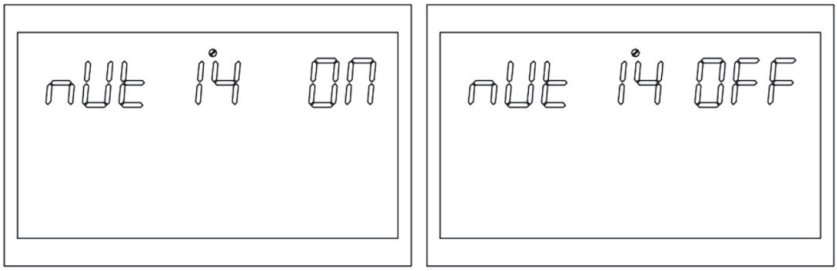


Figure 1-25 Mute Settings Page

Function description: Set whether the buzzer sounds. Setting conditions: All states can be set.

explain：

MUE:Mute
The default setting is OFF, which disables the function. When set to ON, the buzzer remains silent under any conditions, including alarms or faults.

All modes are set and working properly, but images cannot be displayed.

11.2.14 Battery Return to Grid Voltage Point (BTG)

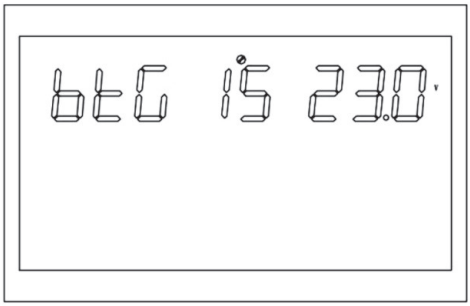


Figure 1-26 Battery voltage conversion to mains power settings page

Function description: When both battery and mains power are available, the system automatically switches to mains power once the battery reaches a specific voltage level, preventing complete discharge.
Settings: All states can be configured. Output priority should be set to PV and PBG modes.

explain：

BTG:Back To Grid
The default setting is 46V

When the battery definition mode is CUS (Customer Set Type) mode:
The range can be set to [44,52]

When the battery definition mode is set to AGM (lead-acid battery type) or FLD (water-filled battery type):
The default setting is 46V, with a range of [44,52]

When the battery definition mode is set to LIB (Lithium-Ion Battery) mode:
The default setting is 47.6V, with a range of [40,50]

11.2.15 Back to Battery Mode Voltage Point (BTB)

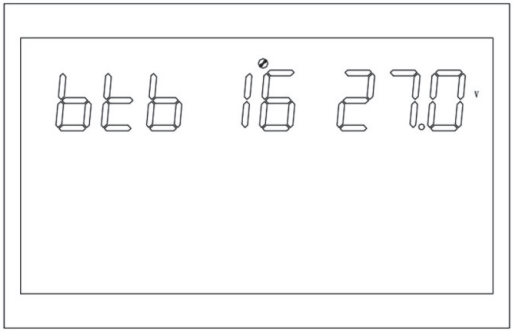


Figure 1-27: Battery Voltage Setting Page for AC to Battery Mode

Function description: After the battery is powered down at low voltage, it must reach a specific voltage level before the device can restart in battery mode.
Set conditions: All statuses can be set.

explain：

BTB:Back To Battery
The default setting is 52V
When set to FUL, the battery will charge until fully charged before the device can restart in battery mode.

When the battery definition mode is CUS (Customer Set Type) mode:
The adjustable range is [48,58]. When Vbtb exceeds TCFV-1V, the system automatically switches back to battery mode with the voltage maintained at TCFV-1V.

If the output priority is set to PV priority or PV Battery Grid (PBG) output, and the system is not in battery mode, it will revert to battery mode if the battery voltage exceeds TCFV-1V.

When the battery definition mode is set to AGM (lead-acid battery type) or FLD (water-filled battery type):
The default setting is 52V, with a range of [48,58] (same logic as above).

When the battery definition mode is set to LIB (Lithium-Ion Battery) mode:
The default setting is 54.4V, with a configurable range of [46,58] (same logic as above).

11.2.16 Battery Type (BAT)

Figure 1-28 Battery Type Settings Page

Feature description: Battery type setting function.
Set conditions: All statuses can be set.

explain：

BAT:Battery Type
Four battery type configurations: The default is AGM (lead-acid battery); the second is FLD (water-filled battery); the third is LIB (lithium battery); the fourth is CUS (custom user settings).

11.2.17 Battery Low Voltage Point (bAL)

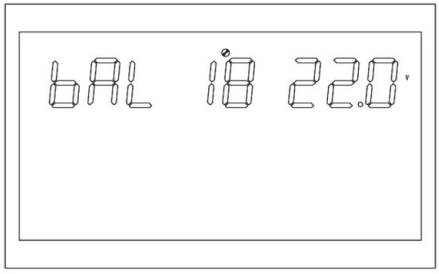


Figure 1-29 Battery Low Voltage Point Settings Page

Function description: Low-voltage alarm point setting.
Set conditions: All statuses can be set.

explain：

bAL:battery Low
The battery cannot be configured when the defined mode is AGM (lead-acid battery type) or FLD (water-filled battery type).
The default setting is 44V

The battery low voltage point can be adjusted when the battery type is set to CUS (Customer Set Type).
, can be set to range [42,54]

When the battery type is set to LIB (lithium battery), you can adjust the low-voltage threshold.
The default setting is 47.6V, with a range of [41.2, 50.0]

11.2.18 Battery Shutdown Point (bAU)

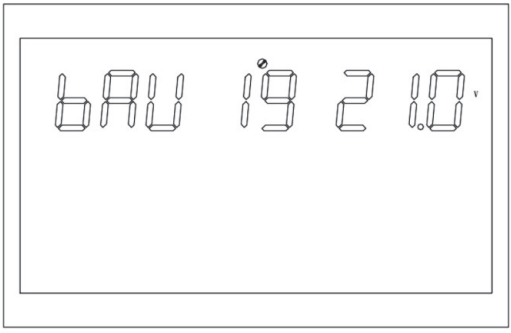


Figure 1-29 Battery shutdown point settings page

Feature description: Battery low-voltage shutdown point setting.
Setting conditions: All states can be set.

explain：

bAU: Battery. This setting cannot be configured when the battery mode is AGM (lead-acid battery type) or FLD (fluent liquid battery type).

The default setting is 42V

The battery shutdown point can be modified when the battery type is set to CUS (Customer Set Type).
Set the range to [40,48]

When the battery type is set to LIB (lithium battery), you can adjust the battery shutdown point.
The default setting is 46V, with a range of [40,48]

11.2.19 Constant Voltage Mode Voltage Point Setting (bCV)

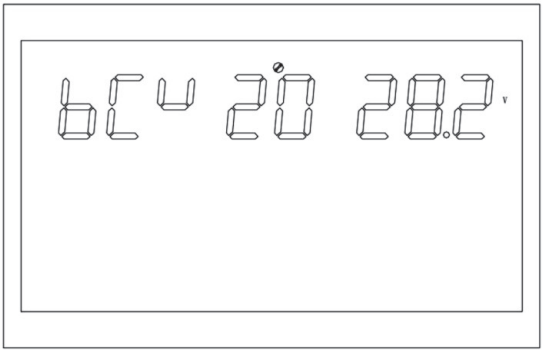


Figure 1-30 Voltage Point Settings Page for Constant Voltage Mode

Function description: Constant voltage

point setting function.

Set conditions: All states can be set.

explain：

bCV:battery Constant Voltage
The battery cannot be configured when the defined mode is AGM (lead-acid battery type) or FLD (water-filled battery type).
The default initial settings are 56.4V (AGM) and 58V (FLD).

When the battery type is set to CUS (Customer-Defined Type), you can modify the constant-voltage charging point.
You can set the range to [48,60]. The constant voltage must be higher than the float voltage.

When the battery type is set to LIB (lithium battery), you can adjust the constant voltage charging point.
The default value is 56.4, with a configurable range of [48,60]. The constant voltage must be higher than the float voltage.

When the battery type is set to Fe (iron lithium battery), you can modify the constant voltage charging point.

11.2.20 Floating Charge Mode Voltage Point Setting (bFL)

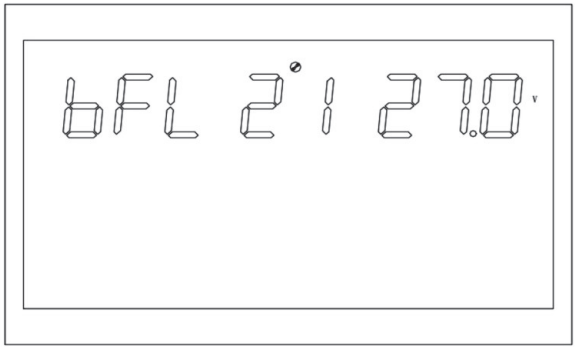


Figure 1-31 Voltage Point Settings Page for Floating Charge Mode

Function description: Float voltage setting

function.

Set conditions: All statuses can be set.

explain：

bFL:battery Float
The battery cannot be set to AGM (lead-acid battery type) or FLD (water-filled battery type) mode.
The default setting is 54V

Setting the battery type to CUS (Customer-Defined Type) allows modification of the battery float charge point.
You can set the range to [48,60]. The constant voltage must be higher than the float voltage.

When the battery type is set to LIB (lithium battery), you can adjust the constant voltage charging point.
The default setting is 55.2V, with a range of [50,58]. The constant voltage must be higher than the float voltage.

11.2.21 Setting of Low Voltage (LLV) Points for Municipal Power Supply

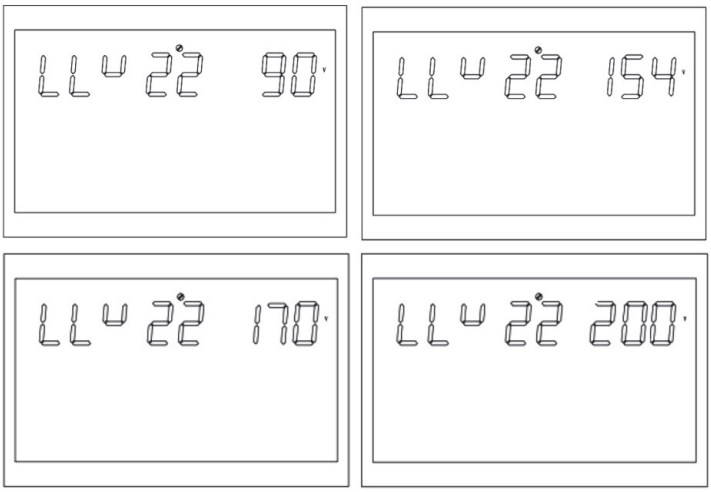


Figure 1-32: Inverter Mode mains low-voltage point setting page

Function description: Set the low-voltage protection point for mains power.
Settings: The inverter operates in APP/GEN and UPS modes, with all states configurable.

explain：

LLV: In Line Low Voltage inverter mode (output mode: MOD must be set to APP/GEN), the mains low voltage point defaults to 154V with a range of [90,154]. (output mode: MOD must be set to UPS), the mains low voltage point defaults to 185V with a range of [170,200].

11.2.22 Setting of Municipal Power High Voltage Point (LHV)

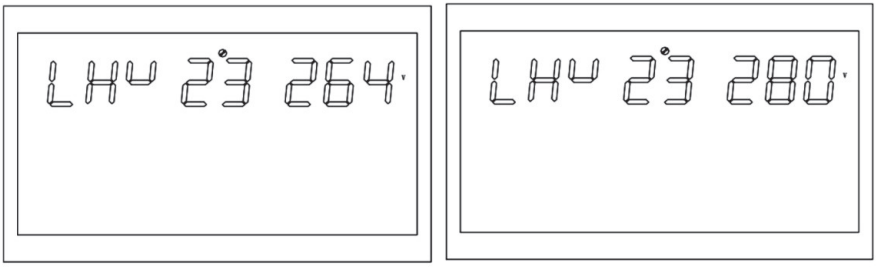


Figure 1-33: Inverter Mode mains high-voltage point setting page

Function description: Set the mains high-voltage protection point.
Settings: The inverter operates in APP/GEN mode, where all parameters can be configured.

explain：

LHV:Line High Voltage
Inverter mode (output mode: MOD must be set to APP/GEN). The mains high-voltage point defaults to 264V, with a configurable range of [264,280].

11.2.23 Low Power Discharge Time Setting (LWD)

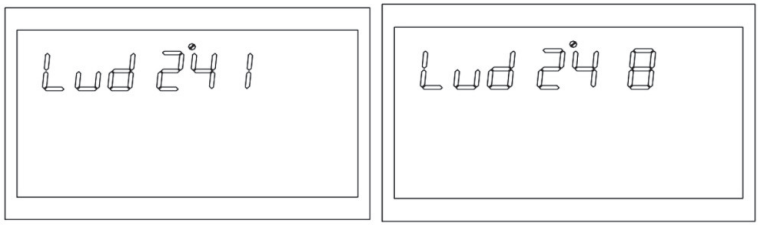


Figure 1-34 Low-power Discharge Time Settings Page

Function Description: Low-power discharge protection. When in battery mode under low load, unlimited discharge may deplete the battery significantly, reducing its lifespan. After the inverter reaches the low-power discharge setting time, the battery's low-voltage shutdown threshold is raised to 44V.
Settings: All states of the inverter can be configured in APP/GEN mode.

explain：

LWD:Low Watt Discharge
In inverter mode, the default low-power discharge time is 8 hours (range: 1-8 hours).
In battery mode, if the discharge duration exceeds 8 hours without reaching the battery shutdown threshold, the system will reset the voltage cutoff to 11V multiplied by the number of battery cells. When the battery reaches this voltage level, it will trigger a 1-minute alarm before shutting down.
If the battery voltage exceeds 13.2V or the battery count exceeds 30 cells for more than 30 seconds, the battery discharge time will reset.

11.2.24 Inverter Soft Start Settings (SRE)

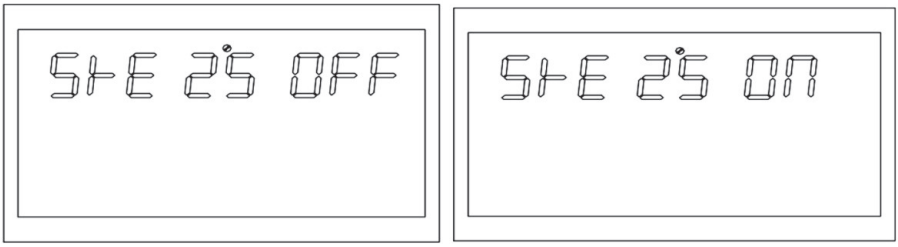


Figure 1-35 Inverter soft start settings page

Function description: When the interface is ON, the inverter output gradually increases from 0 to the target voltage value. When the interface is OFF, the inverter output gradually decreases from 0 to the target voltage value.

0 Directly increases to the target voltage value.
Settings: Available in single-machine mode (see 1.4.2.26).

explain：

SRE:Soft Relay Enable
The default setting is OFF, which means the output switch will close only after the inverter voltage reaches the rated output. If set to ON, the output switch will close before the inverter begins voltage boosting.

11.2.25 Default Settings (STD)

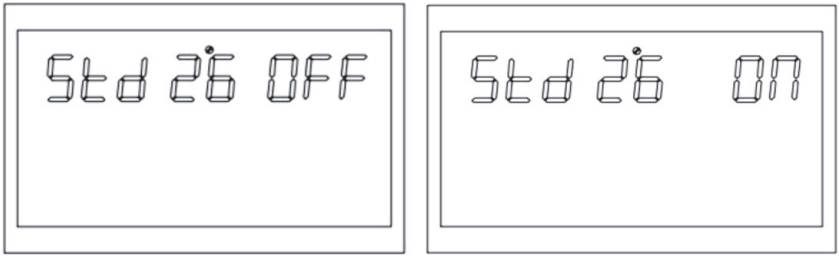


Figure 1-36 Default Value Settings Page

Restore all settings to their default values.
Settings: You can configure them in mains power mode and standby mode (standby: no output but screen on). Not in battery mode.

explain：

STD: Set Default. This interface displays as OFF before the setting. When set to ON, the system restores the default setting. After the setting is completed, this interface will display OFF again.
City power and standby modes can be set and take effect immediately. Battery mode cannot be set, and images cannot be displayed.

11.2.26 Battery Not Connected Alarm (SBA)

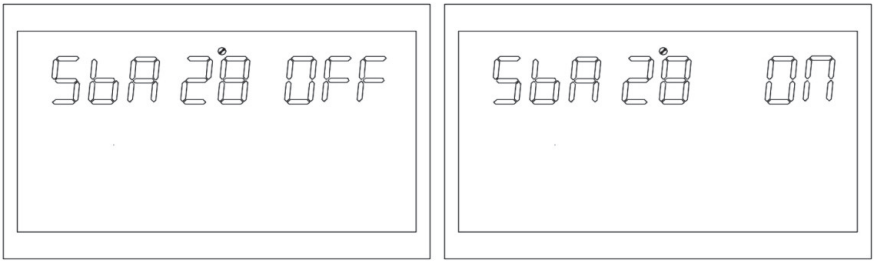


Figure 1-37 Battery Unconnected Alarm Settings Page

Feature description: Enable battery low alert.
Set conditions: All statuses can be set.

explain：

SBA:Set battery alarm.
The default setting is OFF.
Set to OFF. When the battery is not connected, no warnings for unconnected battery, low battery voltage, or under-voltage will appear.
This setting is available in single-machine mode but not in other models.

11.2.27 Equilibrium Model (EQM)

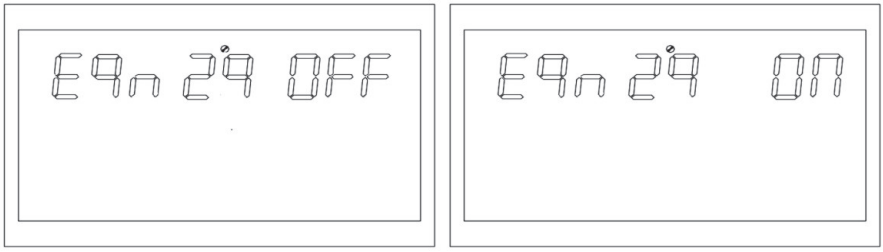


Figure 1-38 Balanced Mode Settings Page

Function description: Set whether the inverter uses the equalization mode.
Set conditions: All statuses can be set.

explain：

EQM:Equalization Mode
The default setting is OFF, and the function is not enabled. Set to ON, the controller will enter the equalization phase when the preset equalization interval (battery equalization cycle) is reached during the float charging phase or when equalization is activated immediately.

11.2.28 Equilibrium Voltage Point Setting (EQV)

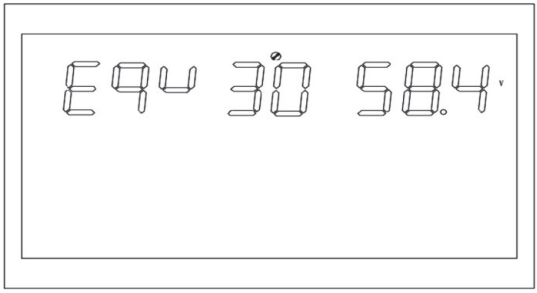


Figure 1-39 Balanced Voltage Point Settings Page

Function description: Voltage balancing point setting. Setting conditions: All states can be set.

explain：

bCV:Equalization Voltage
All modes can be set.
The default value is 58.4, with a range of [48,60].

11.2.29 Equalized Charge Time (EQT)

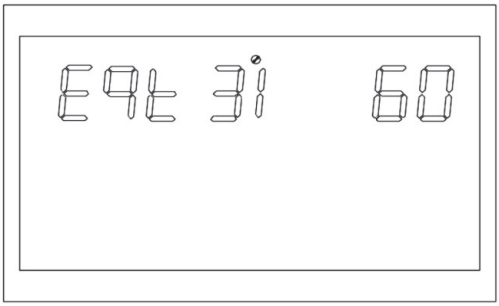


Figure 1-40: Balanced Charging Time Settings Page

Feature description: Balance charging time settings.
Set conditions: All statuses can be set.

explain：

EQT:Equalization Time
During the balancing phase, the controller charges the battery as much as possible until its voltage reaches the equilibrium voltage. It then switches to constant voltage regulation.
The battery voltage is maintained to keep the battery balanced. The battery will remain in the balanced state until the set battery balancing time is reached.
The default setting is 60 minutes, with an adjustable range of [5,900] and increments of 5 minutes.

11.2.30 Equalized Quotient of Out-of-Balance Time (EQO)

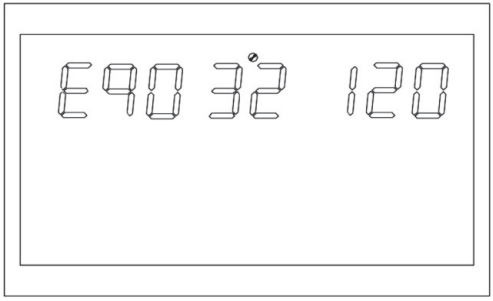


Figure 1-41 Balanced Delay Time Settings Page

Feature description: Set the balanced delay charging time.
Set conditions: All statuses can be set.

explain：

EQT:Equalization Timeout
During the battery balancing phase, if the voltage fails to reach the target level before the preset time expires, the charging controller will extend the balancing duration until the voltage meets the required threshold. Should the voltage remain below the target level after the extended period, the controller will terminate the balancing process and revert to the float charging mode.
The default setting is 120 minutes, with an adjustable range of [5,900] and increments of 5 minutes.

11.2.31 Equilibrium Interval Time Setting (EQI)

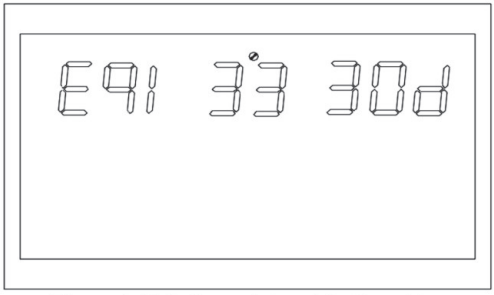


Figure 1-42 Balance Interval Settings Page

Feature description: Set the balanced charging interval.
Set conditions: All statuses can be set.

explain：

EQI:Equalization interval
When the controller detects battery connection during the float charging phase in balanced mode, it initiates the balancing process upon reaching the preset interval (battery balancing cycle).
The default setting is 30 days, with a range of [1,90] and an increment of 1 day.

11.2.32 Immediately activate the equalization settings (EQN)

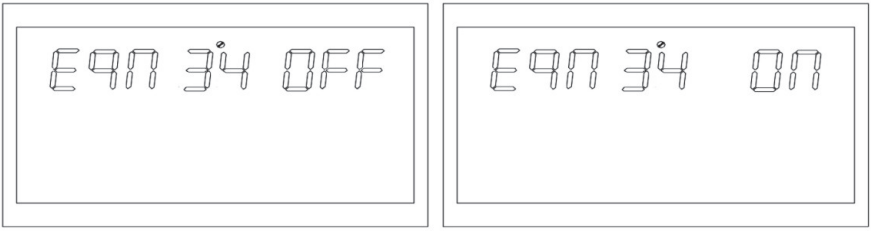


Figure 1-43 Open the equalization settings page now

Feature description: Set whether the inverter starts the equalization mode immediately.
Set conditions: All statuses can be set.

explain：

EQN:Equalization Now

The default setting is OFF, and the function is not enabled. When set to ON, the equalization charging will activate immediately during the float charging phase with equalization mode enabled, and the controller will enter the equalization phase upon detecting battery connection.

11.2.33 Grid-connected Inverter Function (GTI)

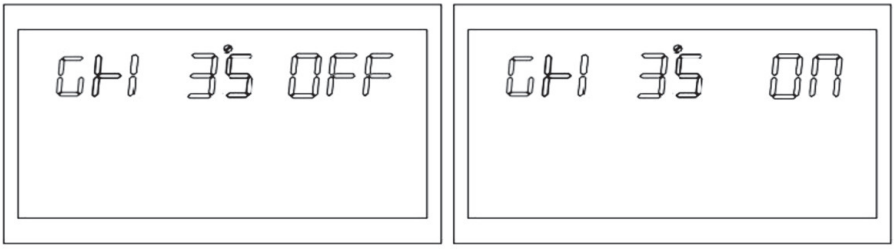


Figure 1-44: Grid-connected Inverter Function Settings Page

Function description: Configures whether the inverter feeds power to the grid in PV priority mains mode or PBG mains mode.
Settings: All statuses can be set, but not on other models.

explain：

GTI:Grid Tie Invert

The default setting is OFF, which disables the function. When set to ON, the inverter performs maximum power point tracking and feeds excess energy back to the grid.

11.2.34 Battery Dual-Output Low Voltage Shutdown Point (DBV)

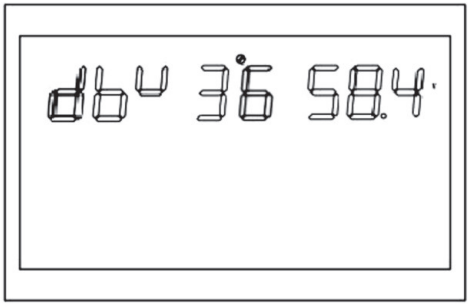


Figure 1-45 Battery Dual Output Low Voltage Shutdown Point

Function description: When enabled, the inverter's secondary output is enabled by default. In battery mode, the secondary output is disabled if the battery voltage drops below the set point. It reactivates when the battery voltage exceeds the set value + 1V per cell.

Set conditions: All statuses can be set.

explain：

DBV:Dual output battery mode cut-off voltage
The default setting is 48V, with a range of [44,60]
When the set point exceeds the constant voltage charging (CV) point by 1V per cell, the CV charging point is used as the recovery voltage.
This feature requires a dual-output auxiliary board.

11.2.35 Battery Dual-Channel Output Duration (DBT)

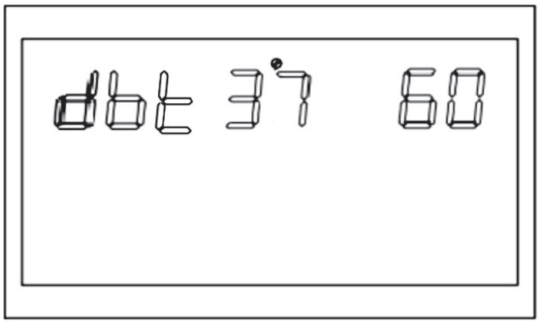


Figure 1-46 Battery Dual Output Low Voltage Shutdown Point

Function description: When enabled, the inverter's secondary circuit output is enabled by default. After entering battery mode, the secondary circuit output is disabled when the battery discharge time reaches the set point.

Set conditions: All statuses can be set.

explain：

DBT:Dual output battery mode cut-off time
The default setting is OFF, and the function is not enabled. The range can be set to [5,890] in minutes.
When set to FUL, the secondary output has no time limit.
This feature requires a dual-output auxiliary board.

11.2.36 BMS Communication Function (BMS)

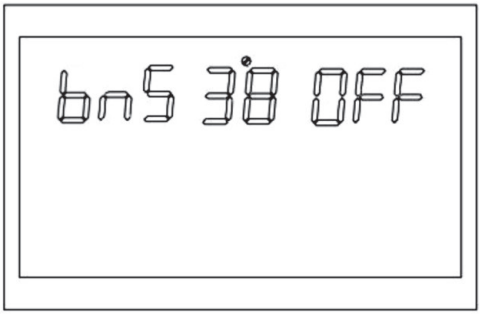


Figure 1-47 BMS Management Function Settings Page

Function description: Configure whether the inverter communicates with the lithium battery BMS.
Set conditions: All statuses can be set.

explain：

BMS:Battery Manage System

The default setting is OFF, which disables the function. When set to ON, the inverter communicates with the lithium battery BMS via the central control board to retrieve battery information.

When the function is enabled, any communication error will trigger Alarm 56, and the inverter will no longer follow the BMS's operational logic.
This feature requires a central control board.
This option page is hidden when the central control board is not connected.

11.2.37 Low SOC Shutdown Function (BSU)

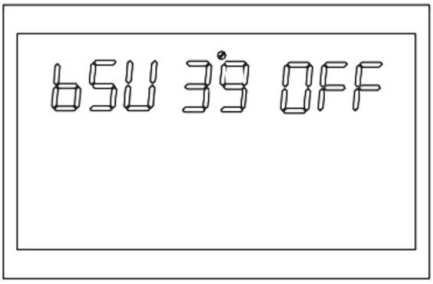


Figure 1-48: Low SOC Power-off Settings Page

Function description: Shut down the inverter when the SOC is low. Setting conditions: All states can be set.

Note: BSU (Battery SOC under lock) defaults to 20, with a configurable range of [5,50]. When the lithium battery SOC reaches the set value in battery mode, the inverter shuts down and triggers Alarm 68. Alarm 68 is cleared when the SOC returns to the set value +5%. In standby mode, the inverter must reach the set value +10% to enter battery mode; failure to meet this threshold triggers Alarm 69. Once enabled, Alarm 69 is triggered when the lithium battery SOC reaches the set value +5%, and Alarm 69 is cleared when the SOC returns to the set value +10%. The function can be disabled (OFF), at which point the inverter ceases all shutdown, startup, and alarm operations based on SOC status. When enabled, the inverter no longer executes operational logic based on SOC information in case of communication anomalies, and all related alarms are cleared.

11.2.38 High SOC Battery Conversion Function (STB)

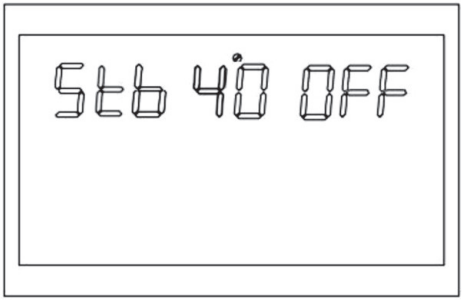


Figure 1-49: Low SOC to mains power conversion function settings page

Function description: Set the SOC value for the inverter's battery mode.
Set conditions: All statuses can be set.

explain：

STB:High Battery SOC turn to battery mode.
The default setting is 95, with a configurable range of [10,100]. In the PBG Priority mains power mode, the inverter switches to battery mode when the lithium battery SOC reaches the preset value. When enabled, the inverter only switches to battery mode if the SOC exceeds the preset threshold and the battery voltage is above the battery mode voltage point.

It can be set to OFF, at which point the inverter will no longer switch between mains and battery modes based on the SOC.
When the function is enabled, if a communication error occurs, the inverter will no longer base its operation logic on SOC data and will clear all related alarms.

11.2.39 Low SOC Switching to Grid Power Function (STG)

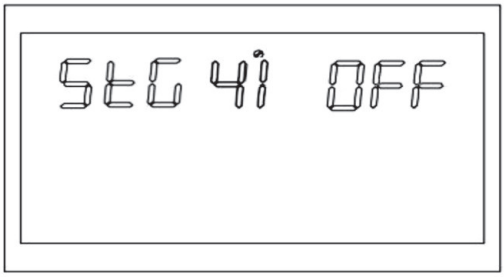


Figure 1-50: Low SOC to mains power conversion function settings page

Function description: Set the SOC value for inverter switching to mains power mode.
Set conditions: All statuses can be set.

explain：

STG:Battery SOC turn to grid mode.
The default setting is 50, with a configurable range of [10,90]. In PBG priority mains power mode, the lithium battery switches to mains power mode when its SOC reaches the preset value. When enabled, the inverter automatically switches to mains power mode if the SOC drops below the preset threshold or the battery voltage falls below the mains power threshold.

You can set it to OFF, at which point the inverter will no longer switch between battery and mains power modes based on the SOC.
When the function is enabled, if a communication error occurs, the inverter will no longer base its operation logic on SOC data and will clear all related alarms.
When this setting is higher than the STB threshold, both STB and STG will no longer be active after the next activation.

12. Power on/off

12.1 Power-on Steps

The device can be powered on when connected to a compliant battery or mains power supply (the mains input range should be verified based on the output mode).
(1) Power supply activation

Connect to standard mains power, press the switch to turn it on. If mains power output is selected as the priority, the system will power up. After a brief wait, the panel will display 'Mains Mode' indicating the startup is complete, and the system will enter mains power mode.
(2) Battery startup

Connect a standard battery, press the switch, and the inverter will activate the power supply.

The system will automatically power on. After a brief wait, the battery mode indicator on the panel will appear, signaling the device has completed startup and entered battery mode.

12.2 Power-off Steps

When the system is operating in battery or mains power mode, pressing the switch again to turn it off will shut down the system.

Note: Air conditioners and similar devices require at least 2-3 minutes to restart, as they need sufficient time to balance the refrigerant gas in the circuit. If a power outage occurs and is restored quickly, it may damage the appliances you're connected to. To prevent such damage, check with the air conditioner manufacturer before installation to confirm if a delay function is included. Otherwise, the inverter/charger may trigger an overload fault and cut off power to protect your equipment, but it could still cause internal damage to the air conditioner.

12.3 Silent Operation

The inverter can be muted or unmuted by setting MUTE ON or OFF, regardless of its operating mode.

12.4 Operations in Alarm State and Fault Mode

(1) In alarm state:

When the inverter emits an alarm sound and the LED fault indicator lights up, it means the inverter is in alarm mode. You can troubleshoot the cause based on the alarm information or contact the supplier.

(2) In fault mode:

When the inverter's buzzer is continuously sounding and the LED fault indicator remains lit, it indicates the inverter is operating in fault mode. Contact the supplier or maintenance personnel with the fault alarm details to assist in troubleshooting.

13. Fault and Alarm Description

Fault and alarm icons

13.1 Function Description:

The ALA alarm code flashes and the buzzer sounds for 1 second, then stops after 1 minute. The fault indicator stays on, and the buzzer sounds continuously for 10 seconds before stopping. The fault is resolved after stopping. Try restarting the machine. If six restarts fail, the machine remains in the fault state. To restart the machine, completely power off (turn off the screen) or wait for 30 minutes.

The LCD display shows the fault and alarm status as illustrated above: the fault mode icon remains lit while the alarm icon flashes. Contact the manufacturer for troubleshooting based on the fault information.

13.2 Fault Description

(1) Fault: The inverter enters fault mode, with the red LED light remaining on and the LCD displaying the fault code.

(2) Alarm: The inverter has not entered fault mode, with the red LED flashing and the LCD displaying the alarm code.

fault code	Chinese meaning	English meaning	relevant action	Trigger condition	Restoring conditions	fault warning
1	busbar soft start failure	Bus soft start fail	failover mode	The bus cannot reach the set voltage during soft start.	beyond retrieve	hitch
2	busbar overvoltage	Bus high	failover mode	The busbar is above the set value	beyond retrieve	hitch
3	busbar under voltage	Bus low	failover mode	The busbar is below the set value	beyond retrieve	hitch
4	battery overcurrent	Battery Over Current	failover mode	Instantaneous battery current exceeds the set value, immediately protect	beyond retrieve	hitch
5	Overheating	Over temperature	failover mode	The temperature sensor of PFC or INV exceeds the over-temperature threshold.	After enabling reboot, the system cannot recover after six failed restart attempts	hitch
6	battery overvoltage	Battery high	failover mode	The battery voltage exceeds the set value.	Restorable	hitch
7	busbar soft start fault	Bus soft Fault	failover mode	The DC soft-start voltage for the busbar has not reached the set value.	beyond retrieve	hitch
8	busbar short circuit	Bus short Fault	failover mode	The busbar temporarily drops below the set value during normal operation.	beyond retrieve	hitch
9	inverter soft	INV soft	failover	Inverter soft start for a	beyond retrieve	hitch

fault code	Chinese meaning	English meaning	relevant action	Trigger condition	Restoring conditions	fault warning
	start failure	Fault	mode	period of time After that, the rated output voltage still cannot be achieved.		
10	inverter output overvoltage	INV over voltage	failover mode	In battery mode, the inverter voltage exceeds the set value.	beyond retrieve	hitch
11	inverter output under voltage	INV under voltage	failover mode	The inverter voltage is below the set value in battery mode.	beyond retrieve	hitch
12	inverter short circuit	INV short	failover mode	The inverter voltage momentarily falls below the set point, while the current momentarily exceeds the set point.	The system cannot recover after six failed restart attempts	hitch
13	negative power protection	Negative power	failover mode	The inverter power remains below the set value for a sustained period.	beyond retrieve	hitch
14	overload fault	overload fault	failover mode	The load exceeds the specification	After enabling reboot, the system cannot recover after six failed restart attempts	hitch
15	Device malfunction	Model Fault	failover mode	The software-identified machine model does not match the hardware detection	beyond retrieve	hitch
16	No boot program	No boot loader	failover mode	No boot program	beyond retrieve	hitch
17	Program burning in progress	Panel Flash Fault	failover mode	Burning program	Restore after burning	hitch
19	Same serial number	Same Serial	failover mode	In parallel mode, multiple machines with identical serial numbers are detected.	beyond retrieve	hitch
20	CAN communication error	CAN Fault	failover mode	The CAN bus communication is abnormal in parallel mode.	beyond retrieve	hitch
21	excessive battery voltage difference	BAT Volt Different	failover mode	The battery voltage difference between different machines is too large in parallel mode.	beyond retrieve	hitch
22	The input voltage differential is too large.	Line Volt Different	failover mode	The input pressure difference between different machines is too large in parallel mode.	beyond retrieve	hitch
23	input voltage frequency difference	Line Freq Different	failover mode	In parallel mode, the input voltage frequency difference between different machines is too	beyond retrieve	hitch

fault code	Chinese meaning	English meaning	relevant action	Trigger condition	Restoring conditions	fault warning
				large.		
24	Output mode setting error	Output Config Different	failover mode	In three-phase parallel mode, the machine configuration may have missing phases, or both three-phase and single-phase parallel modes, or a single-phase mode.	Set to single-machine operation and disconnect parallel communication, or restore when the three-phase operation setting conditions are met, or when the single-phase parallel setting conditions are met.	hitch
25	output out of step	Output Syn Loss	failover mode	In parallel operation mode, output voltage detection loses synchronization	beyond retrieve	hitch
26	BMS hitch	BMS Fault	failover mode	The battery BMS has fault information	Disable BMS communication or restore BMS after troubleshooting	hitch

(2) Alarm Description

Alarm: The inverter has not entered fault mode, with the red LED flashing and the LCD displaying the alarm code.

alarm code table

alarm code	Chinese meaning	English meaning	relevant action	Trigger condition	Restoring conditions	fault warning
50	Battery not connected	Battery open	Alarm: Battery not charging	The battery voltage is below 8V per cell.	Recoverable (10V/section)	reportan emergency
51	battery low voltage shutdown	Battery Under	Alarm: Battery low voltage or no power to start	The battery voltage is below 10.5V per cell (default)	Recoverable (10V per cell + 0.2N per battery pack)	report an emergency
52	Battery low voltage	Battery low	report an emergency	determined by bAL settings	Recoverable (Action points +0.2V/section)	report an emergency
53	Charger short circuit	Battery charge short	Alarm: Battery not charging	The battery voltage is less than 5V and the charging current exceeds 4A.	beyond retrieve	report an emergency
54	low power discharge	Low watt discharge	report an emergency	The battery discharge exceeds the set low-power discharge time.	Restorable (battery voltage above 13.2V per cell)	report an emergency
55	battery overcharge	Over charge	Alarm: Battery not charging	The battery voltage exceeds the set value.	Restorable	report an emergency
56	BMS lose	BMS Loss	Alarm, lock in standby mode	Communication failed after BMS communication function is enabled	Restorable	report an emergency

alarm code	Chinese meaning	English meaning	relevant action	Trigger condition	Restoring conditions	fault warning
57	Overheating	Over Temperature	Alarm: Battery not charging	The temperature sensor of PFC or INV exceeds the set value	The temperature sensor of PFC or INV is below the set point.	report an emergency
58	Fan malfunction	fan lock	Alarm: If one fan fails, the other fan runs at full speed.	Fan speed signal not detected	Restorable	report an emergency
59	EEPROM hitch	EEPROM fail	report an emergency	EEPROM read/write failed	beyond retrieve	report an emergency
60	overload	overload warning	Alarm: Battery not charging	Load> 102%	Restorable (load <97%)	report an emergency
61	abnormal generator waveform	Abnormal generator waveform	Alarm, operating in battery mode continuously	Abnormal waveform detection of generator	Restorable	report an emergency
62	PV energy is weak	PV Energy Weak	Turn off PV output and charging	The bus voltage is below the set value when the battery is disconnected.	Restore in 10 minutes	report an emergency
68	Low SOC shutdown	SOC Under	Alarm, switch to standby mode	The SOC of the lithium battery is below the set value.	Disable the low SOC shutdown function, or disable BMS communication, or reset SOC to the set value + 5% recovery	report an emergency
69	low SOC	SOC Low	Alarm: If in standby mode, maintain standby mode without turning off the device	The SOC of the lithium battery is below the set value by +5% (in mains power mode or battery mode) or +10% (in standby mode).	Disable the low SOC shutdown function, or disable BMS communication, or reset SOC to the set value + 10% recovery	report an emergency

The images and diagrams in this manual are for reference only. The actual product is subject to change without prior notice.

14. Other features

1. This product supports emergency backup power:

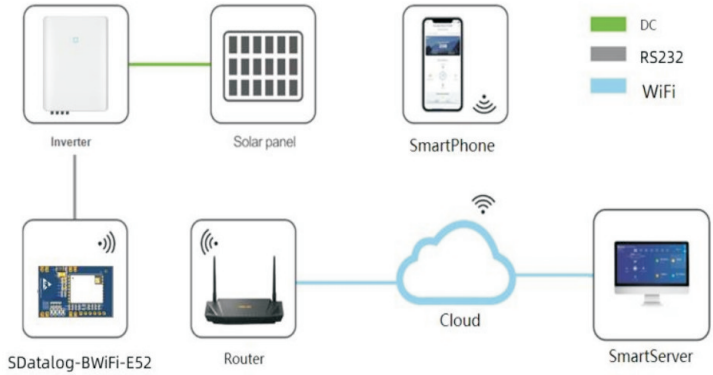
When you connect the AC charging cable to the power grid and the AC input port of this product, the load can operate using the AC output port (with power supplied by the grid instead of the battery). If the grid power is suddenly cut off, the product automatically switches to battery power mode.

This is a non-professional UPS feature that cannot achieve 0ms switching. Do not connect to devices requiring high uninterruptible power supply (e.g., data servers or workstations). Verify compatibility through repeated testing before use. During operation, use only one device at a time to prevent overload protection activation. Our company shall not be held liable for equipment malfunction or data loss caused by improper operation.

2.SDatalog-BWiFi-E52 WIFI module:

2.1 Module Introduction:

This product is designed to extend WiFi wireless network data communication capabilities for devices without built-in connectivity. It connects to devices via an external RS232 interface for data exchange and routes traffic to a cloud-based IoT platform. The solution supports remote data monitoring, control, upgrades, maintenance, and local debugging, providing users with a cost-effective, fully visualized remote monitoring solution that enables rapid device cloud migration.



2.2 Feature Description:

2.2.1 Usability

(1) Easy installation: The external solution is plug-and-play, ensuring convenient maintenance.

(2) Simple configuration: proximal setup (APP), remote setup;

(3) Easy maintenance: Remote maintenance and OTA firmware updates;

(4) Easy to use: Power on, connect to the internet, and register to bind.

2.2.2 General

(1) Device selection: Industrial-grade components, capable of prolonged operation at temperatures ranging from-30°C to +85°C; (2) Stable communication: Real-time command monitoring, network disconnection detection, and long-term operational testing.

(4) Data security: TLS-TCP connection, private protocol, data verification, and data resumption (saves data during network disconnection and resumes transmission upon network recovery).

2.2.3 Flexible

(1) Protocol compatibility: Supports multiple communication protocols;

(2) Local and Remote: The APP supports both local monitoring and remote access.

(3) Proximal parameter adjustment: With the APP, device parameters can be read and set on-site

class	project	parameter
General Parameters	Appearance (length/width/height)	(68*25*12mm)
	weight	35g
	User Manual Language	Chinese, English
	source	5V-12V
	working current	1A
	power dissipation	1.5W
	working temperature	-30℃ ~ +85℃
	storage temperature	-40℃ ~ +105℃
	way to install	USB2.0
	attestation	CE/Rohs/UK-CA
	Quality Assurance	2 years (hardware designed for over 15 years)
joggle	UART	1
device management	Number of managed devices	1
Wireless parameters *(Standard & Frequency Band)*	WiFi service frequency	2400 ~ 2483.5MHz
	WiFi wireless standard	802.11b/g/n
	WiFi speed	Up to 150 Mbps
	BLE	BLE4.2 and above, 2.4G MHz
	WiFi & BLE communication range	50M & 10M
Application parameters	TTL Baud rate	9600/115200bps (default)
	Supported servers	SmartServer

class	project	parameter
	Server communication	TLS-TCP&MQTT
	User configuration	APP configure
	Data upload cycle	5 minutes

2.3 Parameter specifications:

2.4 Appearance of the WIFI module:

2.5 WIFI interface:

pin	definition	Instructions
1	VCCD1	Power Supply - DC 5-12
2	D1	RS232 RX
3	D2	RS232 TX
4	GND	power ground

2.6 WIFI Quick Match Guide:

2.6.1. Installation of Step Collector

1.1. Power on the machine and verify its operational readiness.

1.2. Remove the WiFi collector, plug it into the device, and power it on.

1.3. Once the collector is powered on, proceed to the next step.

2.6.2. Step: Download the AEC Cloud APP

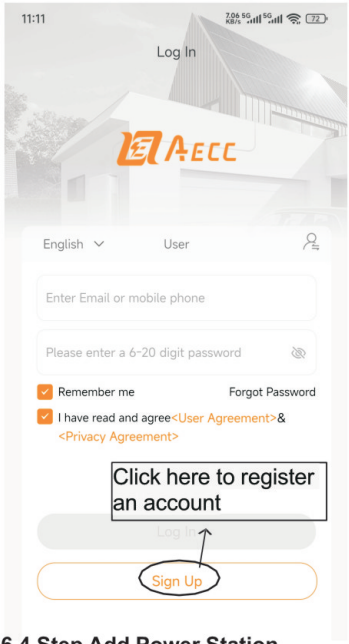
2.1. Scan the QR code on the left to access the AEC CloudAPP download page.

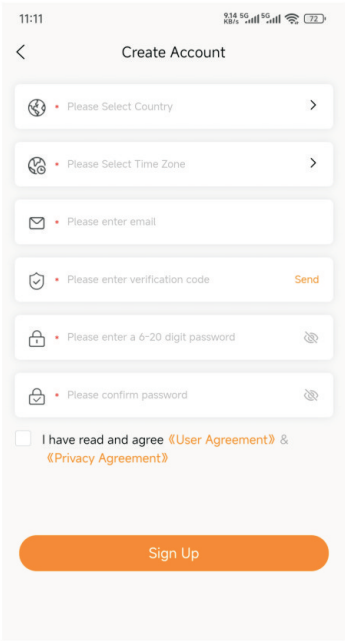
2.2. Download the AECCloud APP based on your needs.

2.6.3 Step Registration

3.1. Launch the AEC Cloud APP and go to the registration page.

3.2. Follow the on-screen instructions to complete registration and click 'Register'.

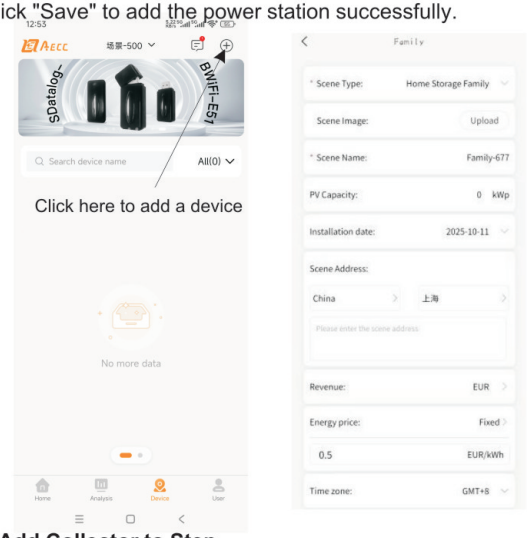




2.6.4.Step Add Power Station

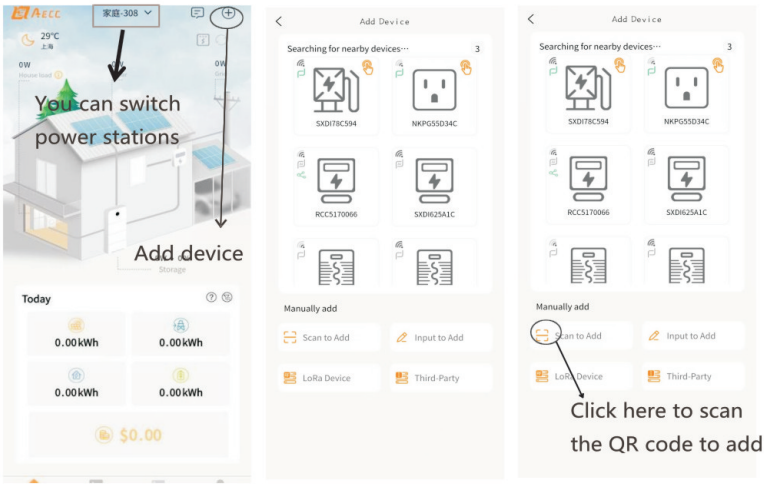
4.1. Open the APP and click "Power Station" to access the power station addition page.

4.2. Click the 'Add' button to access the power station information form.
4.3. Fill in the power station information as prompted.
4.4. Click "Save" to add the power station successfully.



2.6.5. Add Collector to Step

5.1. Ensure that location and Bluetooth permissions are enabled for both your phone and the AECCloud APP.
5.2. Click the scan button in the upper right corner of the 'Home' page, then select 'Add Device' to access the collector addition page.
5.3. To add a collector, scan its QR code, enter the serial number manually, or click 'Add' in the list.
5.4. Once the Bluetooth connection is confirmed, proceed to Step 6.



2.6.6.Step Network Mode Configuration

6.1. Select or enter the WiFi name and password to connect to the network.

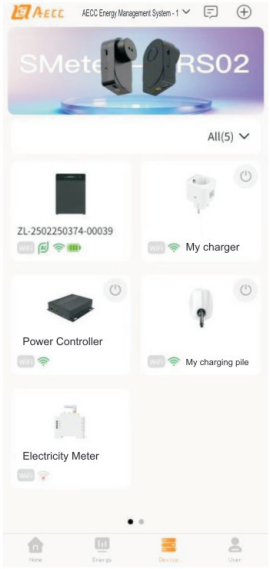
6.2. Click "Next" to start network configuration. Wait a few seconds for the process to complete. Note: If the network fails to connect, check if your phone has enabled location and Bluetooth permissions. After confirming everything is correct, follow the prompts again.

2.6.7.Step Check the status of the collector

7.1. Go back to the homepage, click "Power Station" to access the power station display page, then select the power station to view its equipment:

7.2. Click "Collector" to view its status page. Scroll down to refresh the page. A green "Online" indicator in the upper right corner means the collector is active, while a gray "Offline" indicator indicates it is inactive.

7.3. Click the "Equipment" page again, wait for two minutes, then refresh the page to display the power station equipment list.



Note: If not displayed, contact customer service for assistance.

2.7 Frequently Asked Questions

1. What router frequency bands does the collector support?

Only supports 2.4 GHz WiFi signals, not 5 GHz. Check if your router supports 2.4 GHz.

2. What are the causes of distribution network failure?

The location and Bluetooth permissions for the phone and AEC Cloud APP may not have been granted.

15. Storage, Maintenance and Care

15.1 Storage

Before storage, charge the product to approximately 50% capacity and ensure it is powered off. Store the product upright in a cool, dry, and well-ventilated place. For long-term storage, the recommended temperature range is 15°C–25°C. During storage, charge the product according to the table below:

storage temperature	charging frequency	recharge
0℃-50℃	Every 3 months	Charging to 60%

15.2 Maintenance

A. Remove foreign objects from the air outlet.
B. Clean the interface of the connector with a blower or cloth every month to remove dust and foreign matter.

15.3 Maintenance

A. This product operates at high voltage and must be serviced by certified technicians only.
B. Even when the product is turned off, its internal components remain connected to the battery, posing a potential hazard.
C. Only technicians with sufficient familiarity with this product are authorized to perform repairs or maintenance. Unauthorized personnel are prohibited from operating it.
D. This product may cause electric shock due to high short-circuit current. Please remove all metal items such as wristwatches and rings from your body before maintenance.
E. Do not disassemble this product without permission.

16. Warranty Statement

16.1 Standard Warranty Period

Hua Ping Co., Ltd. provides warranty coverage for products that meet both of the following conditions:

A. 24-month product warranty from the date the customer picks up the goods.
B. Warranty coverage for this product up to 3,000 cycles (with residual capacity ≥75% of initial capacity after 3,000 cycles).

16.2 Warranty Prerequisites

A. This product shall be covered by the warranty for any malfunction occurring during the warranty period, provided that the malfunction is not caused by human error or force majeure.
B. Any system failure, malfunction, or warning of this product that causes the system to fail or operate abnormally must be reported within two weeks of occurrence in accordance with the terms specified in the "Warranty Policy".
C. This product shall be installed or operated by qualified personnel. Such personnel must be familiar with local regulations, standards, and electrical systems, have received professional training, and possess in-depth knowledge of this product.
D. This product must be installed, operated, and used in accordance with the user manual.

E. For this product requiring after-sales service or warranty activation, the original purchase certificate or equivalent documents must be provided, with the validity of such documents verified by Huaping Co., Ltd.

16.3 Warranty Policy

Under normal usage conditions, if this product malfunctions or fails to operate due to inherent quality issues during the warranty period, please email Huaping Co., Ltd. for after-sales support. Huaping will provide solutions through its own channels or authorized third-party service providers/distributors based on the product details and fault information you provide. End-users of Huaping products should first contact their installer or authorized dealer to report and resolve any issues with their purchased products.

A. If the product malfunctions, please provide the following information or documents (which will help the after-sales service team troubleshoot the issue):
   a.Product model name and serial number;
   b. The indicator light image or error message displayed on the inverter screen (if applicable, please provide) and any other describable error information;
   c. Based on comprehensive details of the entire power generation system, including the supporting inverter products and circuit connections;
   d.Previous error messages (if any, please provide);

B. If any quality issues occur during the warranty period, Huaping Co., Ltd.

We will choose the following methods to solve the problem based on the actual situation:
   a remote online answers and guidance or software upgrade;
   b.On-site inspection or repair;
   c.Provide original equipment parts or complete sets of products for on-site replacement.

16.4 Warranty Disclaimers

The following product issues are not covered by Huaping Co., Ltd.'s standard warranty:

A. The product has exceeded its warranty period (unless otherwise agreed by both parties for an extended warranty service);
B. Malfunctions or damages not caused by the product's specified working environment, storage, or usage, but due to non-compliance with the user manual or relevant installation and maintenance requirements, such as improper installation distance or inadequate ventilation.
C. Unauthorized disassembly, repair, or modification of the product without Pelt's authorization;
D. Malfunctions and damages caused by unforeseeable circumstances, human factors, or force majeure, such as severe weather, floods, lightning, overvoltage, insect infestations, fires, or theft;
E. Wearable and consumable parts;
F. The maintenance procedures for this product do not comply with acceptable standards.
J. Deliberate destruction or defacement, or making non-erasable marks (e.g., paint);
H. The machine fails to operate normally when connected to other test equipment (e.g., DC analog power supply).
1. Defects caused by transportation (including scratches on intact packaged products during transit);
J. Rust or corrosion on the product casing due to harsh environmental conditions;
K. Products purchased through unauthorized channels from Huaping Co., Ltd. are not covered by the company's warranty.

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