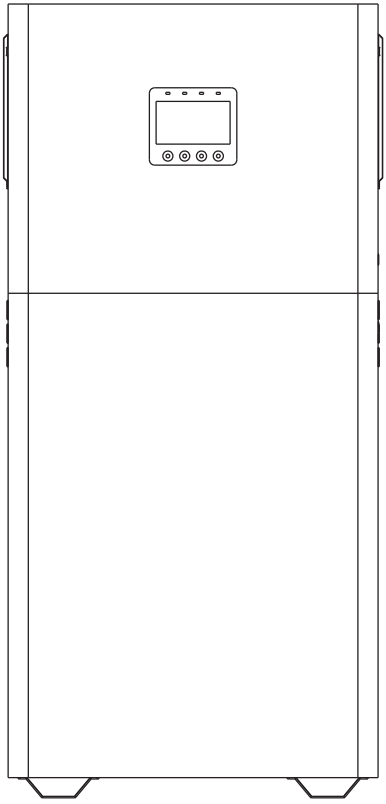
USER MANUAL

Inverter-Storage
All-in-One



Please read the user manual carefully before using the product and keep it for future reference.
This manual is applicable to ESS 6KW+10/15/16KWH

Disclaimer

Thank you for choosing our products and services. Before using the product, please read carefully and fully understand this document to ensure that you can use the product correctly. By using this product, you are deemed to have understood, recognized and accepted all the terms and contents of this document, and the user undertakes to be responsible for his own actions and all consequences arising therefrom.

Incorrect operation of the product or product abnormality caused by force majeure such as fire, typhoon, flood and earthquake may cause unnecessary harm to yourself or others or cause damage to this product and loss of property. All accidents and losses caused by this may have nothing to do with our company. Correspondingly, the service warranty terms promised to you will automatically become invalid.

In compliance with laws and regulations, our company has the final right to interpret product-related documents. If there is any update, revision or termination, no further notice will be given. Our company strives to ensure the accuracy of information such as product functions and features described in the user manual, but does not assume the responsibility for any errors, omissions or subtle differences between the user manual and the product.

If you still have questions, please visit our official website to get the latest product information.

Contents

1. Preface

The family energy storage system series power supply reflects the world's leading power electronics technology. It is a fully functional and excellent inverter power supply with high efficiency, high reliability and high intelligence. We are very happy to provide you with this product, and hope that it will provide you with convenient and reliable services in the coming years to ensure the safe operation of your equipment.

The family energy storage system series power supply technology features:

- With emergency state overload protection, output short circuit protection; battery reverse connection protection; battery under voltage, battery over voltage and other perfect protection functions.
- Battery LED display mode: There are 9 LED indicators, 6 of which are power indicator lights, which are used to indicate the current battery SOC, 1 red light is the fault indicator for warning and protection, and 1 green running light is used to indicate the battery. Standby, charging, and discharging status of the group.
- The comprehensive LCD display is easy to operate, and users can configure their own parameters, such as battery charging current, AC energy charger priority, and different parameters can be configured based on different loads.
- Hibernation Function: When the system meets any of the following conditions, the system enters into low power consumption mode or power-down mode, at this time, the charging and discharging MOS tubes are turned off;
  1) The lowest voltage of the system is lower than the under-voltage protection -100mV and lasts for 60S, then BMS enters into the power-down mode, with the power consumption at uA level. Charging or key press can exit the hibernation mode.

  2) After pressing and holding the "RST" button for 3 to 6 seconds, the indicator lamps are all charged and then go out sequentially, the system enters the hibernation mode when the key is released. Charging, communication and key press can activate the system.

  3) 1 to 3 seconds after releasing the "BAT ON/OFF" button, the system enters the power-down state.

  • Intelligent and perfect lithium battery management system: active equalization, high-precision voltage acquisition, to ensure the consistency of the battery

  • User-friendly alarm function and comprehensive online protection function ensure that the system is safe in use.

  • Stable performance, safe and reliable, long service life

1.1 Precautions

This specification provides users with precautions for installation, commissioning, operation, and troubleshooting. Please keep it in a safe place and read this manual carefully before using this product.

- Do not install, operate, maintain or inspect this product until you have read and understood this specification and can use it properly.
- Strictly adhere to all warnings and instructions provided on the product and in its accompanying manual.
- The power must be off before wiring.
- Keep away from water, steam and other liquid substances, and keep away from flammable and explosive substances.
- The protection class of this equipment is IP20, meaning it is intended for indoor use only. Installation or operation outdoors, on balconies, or in any rain-exposed areas is strictly prohibited.
- Do not disassemble the unit Take it to a qualified service center when service or repair is required3.
- Incorrect re-assembly may result in a risk of electric shock or fire.
- For proper air circulation to dissipate heat, allow ac learance of approx.20 cm to the side.
- To reduce the risk of electric shock, disconnect all wiring before attempting any maintenance or cleaning. There is still a risk of electric shock from turning off the unit only.
- CAUTION-Only qualified personnel can install this device with battery.
- NEVER charge a frozen battery.
- For optimum operation of this inverter/charger, please follow required spec to select appropriatecable size. It's very important to correctly operate this inverter/charger.
- GROUNDING INSTRUCTIONS -This inverter/ charger should be connected to a permanent grounder wiring system. Be sure to comply with local requirements and regulation to in stalthis inverter.
- Warning!! Only qualified service persons are able to service this device. lf errors still persistafter following troubleshooting table, please send this inverter/charger back to local dealer orservice center formaintenance.
- WARNING: High voltage at the side AC output terminals. This equipment must be placed where children cannot access it.

1.2. Unpacking inspection

Residential Energy Storage System Power Supply has undergone rigorous testing before leaving the factory, but may be damaged during transportation. Therefore, please inspect the following items for completeness upon unpacking, and verify the model number, capacity, input voltage, output voltage, etc. If any abnormalities or discrepancies are found, please contact us promptly. The packing list is shown in the table below.

No.		Quantity
1	Inverter-Storage All-in-One	1
2	User manual	1

1.3 Storage environment

The following matters should be observed when storing this product to avoid possible adverse effects.

- Placed in a place free of dirt and dry and ventilated
- Ambient temperature: -10 ℃ ~ 40 ℃
- Ambient relative humidity: ≤90% RH, no condensation
- Keep away from corrosive gases and liquids
- Long-term unused power supply should be energized every six months

1.4 Handling

During the handling of this product, it should avoid strong vibration, falling, and bumping. It is strictly forbidden to invert the package. Do not lose the accessories, instruction manual, warranty card, etc. when unpacking.

In addition, this product is bulky and heavy, so be careful when handling it to avoid injury to your body.

2. Product introduction

2.1 System rating

No.	Item	Rating
1	Max.AC output power	6KW
2	Battery Energy	10/15/16KWh
3	Max.PV Input Power	9KW
4	Nominal Output Voltage	230V
5	Nominal Output Frequency	50/60Hz
6	Communication/ Monitoring	RS485/CAN/WiFi(Optional)
7	Noise	60dB

No.	Item	Rating
08	IP level	IP20
09	Working temperature range	Charge: 0℃~55℃ Discharge: -20℃~55℃
10	Storage Temperature	Temperature: -10℃ ~ 40℃ Humidity: 10%~90%RH Within six months after initial charge
11	Warranty	Inverter two years, Battery five years

2.2 Inverter Specifications

2.2.1 Out Specification

No.	Item	Value	Comments
1	Output power	6000W	When setting the Output voltage to 208V, the Output Power rating will be reduced to 90%;
2	Nominal Voltage	230Vac(208/220/230/240Vac)	Default 220V, manual set LCD
3	Waveform	Sinusoidal	
4	Voltage regulation	±5%	
5	Nominal frequency	50/60Hz	
6	Output overload battery mode	102%<Load≤110%	1 minute minimum, then alarm and turn off output
		110%< Load≤130%	10 seconds minimum, then alarm and turn off output
		Load>150%	200 ms minimum, then alarm and turn off output

2.2.2 Battery Sppecifications

No.	Item	Value
1	Nominal Battery Voltage	48Vdc
2	Cold Start Voltage(Lead-Acid Mode)	48Vdc
3	Cold Start SOC(Li Mode)	30%
4	Nominal operating voltage range of the battery pack	40~58Vdc
5	Charging current	2~100A
6	Default charging current	60A
7	Charging mode	Two/Three/Auto

8	PV charging method	±5%
9	PV maximum charging current	120A
10	AC/GEN maximum charging current	80A
11	Max. Charging Current (AC Charger Plus Solar Charger)	120A

2.2.3 PV Specification

No.	Item	Value
1	PV maximum input power	9000W
2	PV maximum input current	18A
3	Efficiency	99.5% max
4	PV Voltage accuracy	±2%
5	MPPT Voltage	40~450Vdc
6	Recommended PV configuration voltage	MPPT Voltage: 300- 340V Voltage Open Circuit: 370-430V
7	Max PV Voltage	500Vdc
8	Min PV Voltage	60Vdc
9	Pv start-up Voltage	80Vdc

2.2.4 AC/GEN Specifications

No.	Item	Value	Comments
1	Nominal voltage	230Vac	Settable:208/220/230/240Vac
2	Input voltage range	90~280Vac	Settable
3	AC Input low loss	154Vac(default) Settable:90-154Vac	Appliance mode Generator mode
		185Vac(default) Settable:170~200Vac	UPS mode
4	AC Input low comeback	Low loss voltage+9V	
5	AC Input high loss	264Vac(default) Settable:264~280	Appliance mode Generator mode
		264Vac	UPS mode
6	AC Input high comeback	High loss voltage-9V	
7	Nominal frequency	50/60Hz	
8	Frequency range	40/70Hz	

No.	Item	Value	Comments
9	Freq.low/Comeback	40/43.5Hz@50Hz(UPS mode) 40/40.5Hz@Hz(APP/GEN mode)	
		50/53.5Hz@60Hz(UPS mode) 50/50.5Hz@60Hz(APP/GEN mode)	
10	Freq.High loss/Comeback	60/56.5Hz@50Hz(UPS mode) 70/69.5Hz@50Hz(APP/GEN mode)	
		70/66.5Hz@60Hz(UPS mode) 70/69.5Hz@60Hz(APP/GEN mode)	
11	Max current(RMS)	40A	> 20A,60s > 22A,10s > 24A,3s > 26A,200ms

2.2.5 General Specifications

No.	Item	Value
1	Rated power	6000W, power factor 1
2	MPPT ranges	60V~450V, 500Voc
3	AC output	Pure sine wave
4	Power supply mode	Solar and utility grid can power loads at the same time

2.2.6 Communication

No.	Item	Content
1	Display	LCD
2	Communication	RS485/CAN
3	Monitoring	WiFi(Optional)

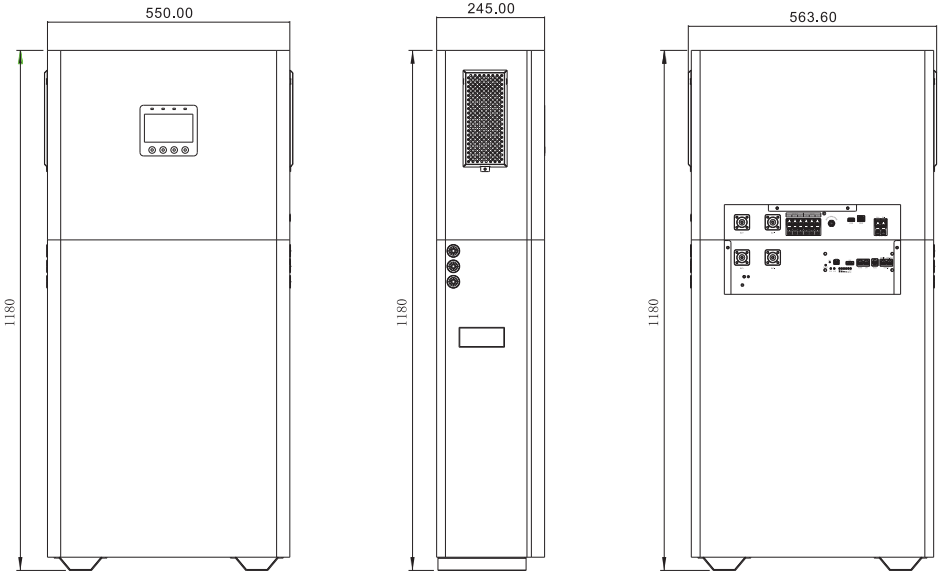
2.3 Battery pack parameters

No.	Item	Rating
1	Type	LiFePO4 Battery
2	Pack Method	1P16S
3	Nominal capacity	200/280/314Ah
4	Nominal voltage	51.2V
5	Energy	10/15/16KWh
6	Operating voltage range	40~58.4V
7	Standard charge/discharge current	100A
8	Max.charge current	200A

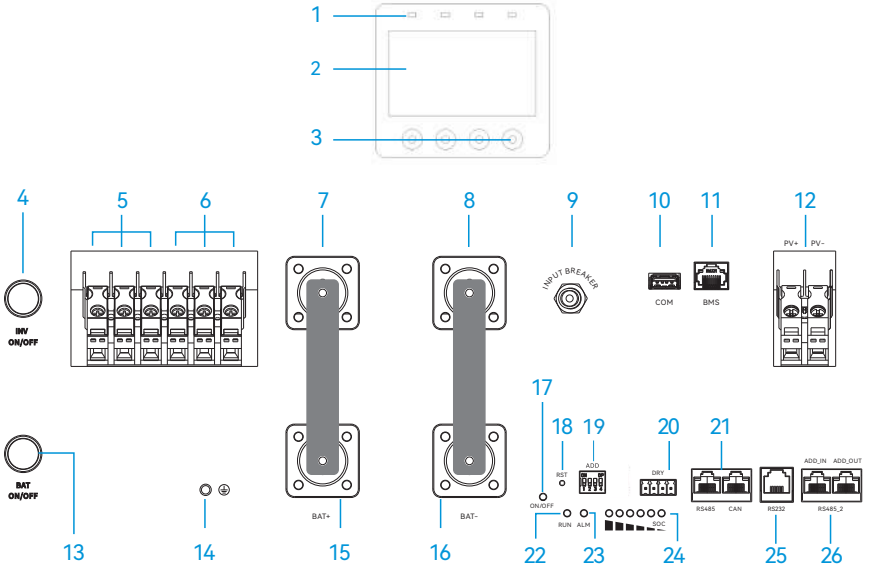
9	Max.contiues discharge current	200A
10	Operating efficiency	98%
11	Cycle life	8,000 times(70%DOD)
12	Internal impedance	≤50mΩ
13	Communication Mode	CAN, RS485
14	WIFI remote monitoring and upgrading	Mobile APP/PC End

3. Product Structure

3.1 Over appearance dimensions



3.2 Panel definition



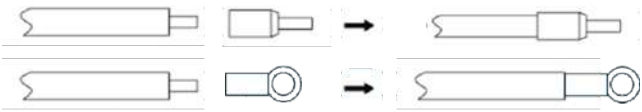
No.	Description	No.	Description
1	INV operation status light	14	Battery grounding
2	Display PCS running status data information	15	Positive battery terminal
3	INV Control Button	16	Negative battery terminal
4	INV ON/OFF	17	MOS status indicatorlight
5	AC Output（L-N-PE）	18	Battery reset
6	AC Input（PE-L-N）	19	Dip Switch
7	Positive battery terminal	20	Dry node output terminal
8	Negative battery terminal	21	RS485 & CAN communication interface
9	INPUT BREAKER	22	Operation status indicator light
10	Smart Communication Port	23	Alarm status indicator light
11	BMS Communication Port	24	SOC status indicator light
12	Photovoltaic (PV) input	25	RS232 communication interface
13	BAT ON/OFF	26	RS485_2 parallel interface

4. Installation instructions

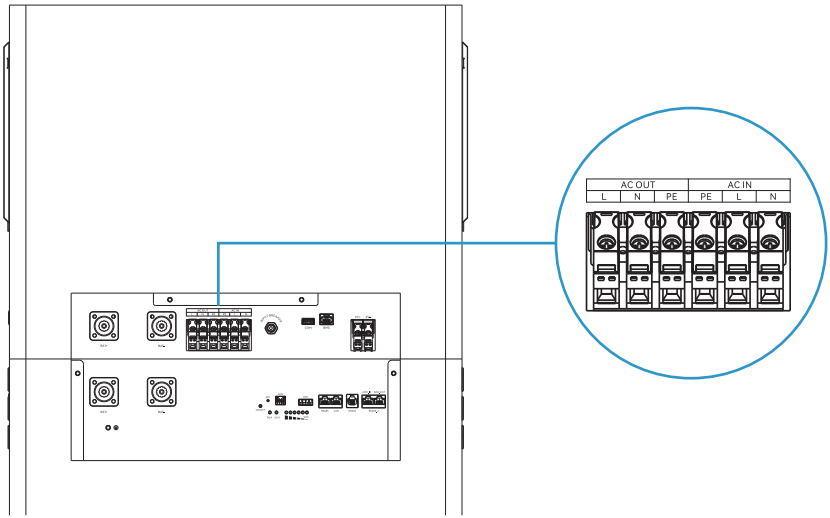
4.1 External Protective Grounding Connection

	DANGER: Ensure a reliable connection of the grounding wire to prevent electrical shock hazards.
	WARNING: • The external grounding protection point provides a reliable grounding. Do not use • inappropriate grounding conductors as it may result in product damage or personal injury. • If unsure about the grounding connection, please consult a professional for proper guidance.

The external grounding point is located at the mains input terminal. After crimping with a tubular terminal, connect it to the "PE" (Protective Earth) port on the mains input side, as shown in the figure below:



图— Figure 1



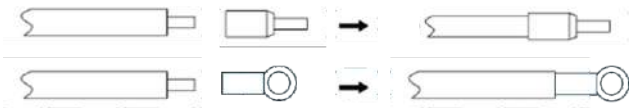
4.2 AC Input/Output Connection

⚠	**CAUTION!** Before connecting to AC input power source, please install a separate AC breaker between inverter and AC input power source. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current of AC input. The recommended spec of AC breaker is 32A for 6KW inverter.
⚠	**WARNING!** It's very important for system safety and efficient operation to use appropriate cable for AC dual output connection. To reduce risk of injury, please use the proper recommended cable size as below.Make sure AC power is disconnected before attempting to connect AC power to the unit.All operations during the electrical connection process, as well as the specifications of cables and components used, must comply with local laws and regulations. The cable color mentioned below is for typical reference.
⚠	**CAUTION!** There are two terminal blocks with "AC IN", ""AC OUT"markings. Please do NOT mis-connect input and output connectors.
⚠	**CAUTION!** Be sure to connect AC cables with correct polarity. If L and N wires are connected reversely, it may cause utility short-circuited when these inverters are worked in parallel operation.
⚠	**WARNING!** All wiring must be performed by a qualified personnel.
⚠	**WARNING!** To minimize risks and ensure a safer, more efficient system, please use the recommended cable sizes below.
⚠	**WARNING!** Grounding Protection Connection: , There is a grounding port at the AC IN terminal, which must be connected to the mains earth ground. Failure to do so may result in electric shock hazards.

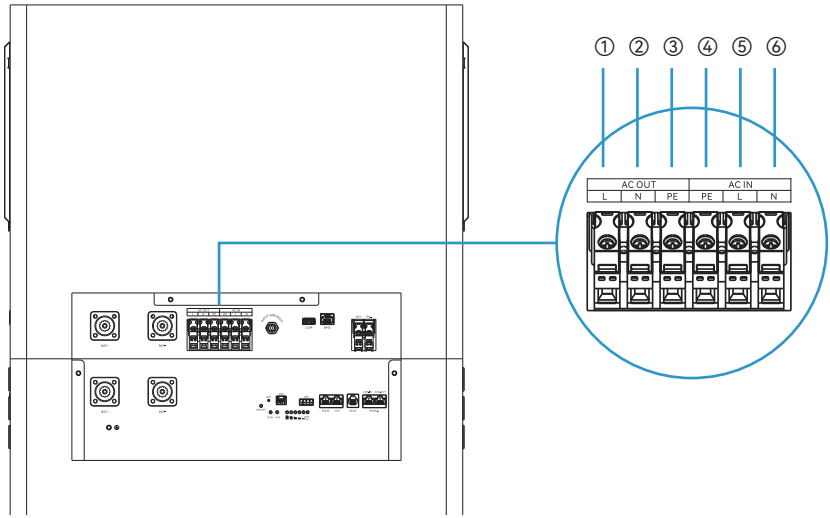
Suggestion for AC input wires

Gauge	Cable (mm^2)
11 AWG	4

1. Before making AC connection, be sure to open AC circuit breaker first.
2. Remove insulation sleeve 12mm from the head of cables, shorten the conductor part to 10 mm. Insert the cable into the tubular terminal. Then use terminal crimping tool make the terminal and cable connected tightly.
3. Insert AC input/output cables according to polarities indicated on terminal block and tighten the terminal screws. Be sure to connect PE protective cable first.



图— Figure 1



No.	Name	Explanation
1	AC OUT —L	AC output live wire
2	AC OUT —N	AC output neutral wire
3	AC OUT —PE	AC output ground wire
4	AC IN —PE	AC input ground wire
5	AC IN —L	AC input live wire
6	AC IN —N	AC input neutral wire

CAUTION: Appliances such as air conditioner are required at least 2~3 minutes to restart be causeit's required to have enough time to balance refrigerant gas inside of circuits. lf a power shortageoccurs and recovers in a short time, it will cause damage to your connected appliances. To prevent this kind of damage, please check manufacturer of air conditioner if it's equipped with time-delayfunction before installation. Otherwise, this inverter/ charger will trig overload fault and cut of out put to protect your appliance but sometimes it still causes internal damage to the air conditioner.

4.3 PV Connection

CAUTION!
Before connecting to AC input power source, please install a separate AC breaker between inverter and AC input power source. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current of AC input. The recommended spec of AC breaker is 32A for 6KW inverter.

	**WARNING!** It's very important for system safety and efficient operation to use appropriate cable for AC dual output connection. To reduce risk of injury, please use the proper recommended cable size as below.Make sure AC power is disconnected before attempting to connect AC power to the unit.All operations during the electrical connection process, as well as the specifications of cables and components used, must comply with local laws and regulations. The cable color mentioned below is for typical reference.
	**CAUTION!** There are two terminal blocks with "AC IN", ""AC OUT"markings. Please do NOT mis-connect input and output connectors.
	**CAUTION!** Be sure to connect AC cables with correct polarity. If L and N wires are connected reversely, it may cause utility short-circuited when these inverters are worked in parallel operation.
	**WARNING!** All wiring must be performed by a qualified personnel.
	**WARNING!** To minimize risks and ensure a safer, more efficient system, please use the recommended cable sizes below.
	**WARNING!** Grounding Protection Connection: , There is a grounding port at the AC IN terminal, which must be connected to the mains earth ground. Failure to do so may result in electric shock hazards.

Model	Gauge	Cable (mm^2)
6KW Inverter	10AWG	5.26

PV Module Selection:

When selecting proper PV modules, please be sure to consider below parameters:

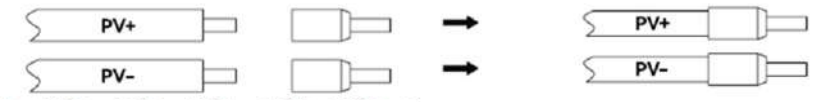
1. Open circuit Voltage (Voc) of PV modules not exceeds max. PV array open circuit voltage of inverter.

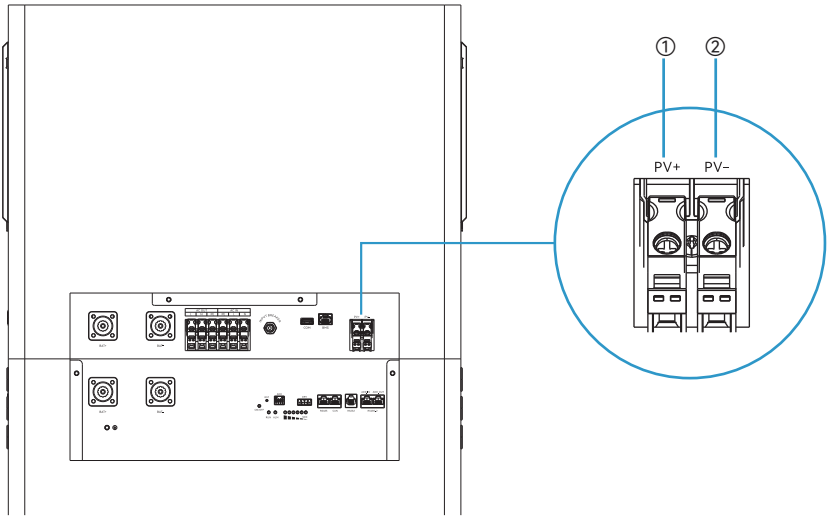
2. Open circuit Voltage (Voc) of PV modules should be higher than start-up voltage.

INVERTER MODEL	6KW Inverter
Max. PV Array Open Circuit Voltage	500Vdc
PV maximum input power	9000W
Start-up Voltage	80Vdc
PV Array MPPT Voltage Range	60Vdc~450Vdc

Please follow below steps to implement PV module connection:

1. Before making PV connection, be sure to close DC circuit breaker first.
2. Remove insulation sleeve 12mm from the head of cables, shorten the conductor part to 10 mm. Insert the cable into the tubular terminal. Then use terminal crimping tool make the terminal and cable connected tightly
3. Use multi-meter check to ensure the polarities are correct.
4. Insert PV cables according to polarities indicated on terminal block and tighten the terminal screws.



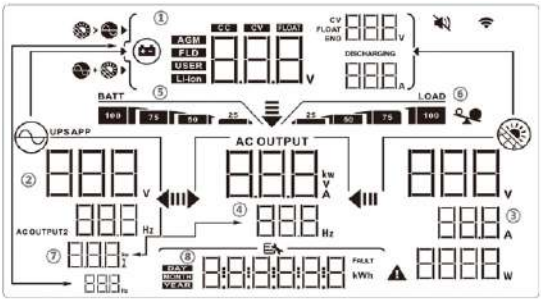


No.	Name	Explanation
1	PV+	Photovoltaic (PV) positive input
2	PV-	Photovoltaic (PV) negative input

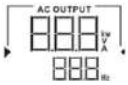
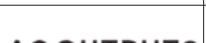
5. Display and Configuration Functions

5.1 Inverter display

The LCD display information will be switched in turns by pressing “UP” or “DOWN” key.The selectable information is switched as below order: voltage, frequency, current, power, firmware version.



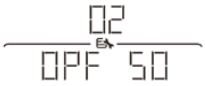
Display area	Icon	Description
Battery Information		Battery icon
		Battery type
		Three charging period. The CC icon is illuminated during the constant current charging stage, the CV icon is illuminated during the constant voltage charging stage, and the FLOAT icon is illuminated during the float charging stage.
		Indicate battery voltage
		During the constant voltage charging stage, the CV voltage is displayed and the CV icon is illuminated.During the float charging stage, the float voltage is displayed and the FLOAT icon is illuminated.During the discharge state, the end discharge voltage is displayed and the END icon is illuminated.
		Battery charging/discharging current

Display area	Icon	Description
AC Input Information		AC input icon
		UPS or APP input modeWhen set to GEN input, it displays as APP
		AC input voltage and frequency
PV Input Information		PV input icon
		Indicate PV power, PV voltage, PV current, etc.
Output Information		Indicate output voltage(V), apparent power (VA or kVA), output active power (W or kW) alternately, switching every five seconds Indicate output frequency
Battery Capacity		Indicate battery capacity
Load Capacity		Indicate load capacity
		Over load icon
AC OUTPUT2 information		Second AC output icon
		Indicate AC output 2 voltage(V)
Parameter Query, Function Setting or Fault/Alarm Information		Indicate system infomation; Function setting; Indicate Fault/Alarm
Other Information		Mute
		Wifi connected

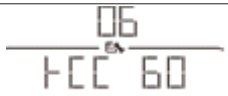
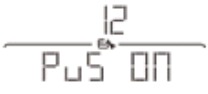
Display area	Icon	Description
Other Information		If PV + Grid, the left and right icon light at same time; if only PV, the right icon is only light
		If PV first, the left and right icon light at same time.

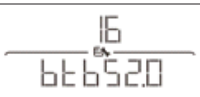
5.2 Inverter configuration

After pressing and holding ENTER button for 2 seconds, the unit will enter setting mode. Press “UP” or “DOWN” button to select setting programs. Then press “ENTER” button to confirm the selection or ESC button to exit.

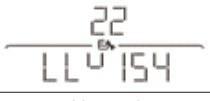
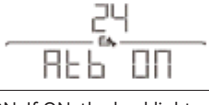
Program	Description	Setting Option	
01	Output voltage		
		230V (default) Adjustable/settable value: 208V, 220V, 230V, 240V	
02	Output frequency		
		50Hz(default) Adjustable/settable frequency: 50Hz, 60Hz	
03	Output source priority	Solar first	
		Solar energy provides power to the loads as first priority.If solar energy is sufficient, battery will be charged with solar energy.If solar energy is not sufficient to power all connected loads, Grid will supply power to the loads at the same time. The extra power will charge the battery.If solar energy and grid are not sufficient, battery will supply power to the loads at same time.If solar, grid and battery power is not sufficient to power loads, inverter will go to standby and charge battery.	
		Grid first (default)	
		Grid provides power to the loads as first priority. Solar power will charge the battery.If solar is not sufficient to charge battery, grid will charge the battery at the same time.If grid is not sufficient to power all connected loads, solar energy will supply power to the loads at the same time.If solar energy and grid are not sufficient, battery will supply power to the loads at same time.If solar, grid and battery power is not sufficient to power loads, inverter will go to standby and charge battery.	

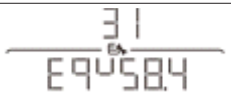
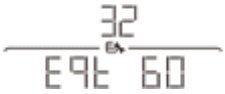
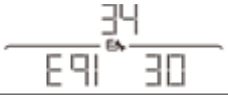
Program	Description	Setting Option	
03	Output source priority	PBG priority	
		Solar energy provides power to the loads as first priority.If solar energy is sufficient, battery will be charged with solar energy.If solar energy is not sufficient to power all connected loads, battery will supply power to the loads at the same time.If solar energy and battery are not sufficient, grid will supply power to the loads at same time.If solar, grid and battery power is not sufficient to power loads,inverter will go to standby and charge battery.	
		MKS	
		Generator provides power to loads as first priority. When generator, PV, battery all exist, the work mode is as PBG. When generator and battery exist (no PV), the work mode is as GPB. When generator and PV exist (no battery), the work mode is as GPB.	
04	Input mode	Appliance (default)	
		Applied to household appliances Typical switching time is 10ms.	
		UPS	
		Applied to computer and other devices. Typical switching time is 10ms.	
		GEN	
		Applied to connect generator from AC IN port. Typically switching time is 20ms.	
05	Charger source priority	PNG: PV and Grid (default)	
		OPV: Only PV	
		PVF: PV first	
		There are three options for charging priority. The default is PNG (PV and grid). PV and Grid are charged at the same time. The second is OPV (Only PV). Only PV charge. The third is PVF (PV first). If both gird and PV are available, PV charge. If only PV is available, PV charge. If only grid is available, grid charge.	

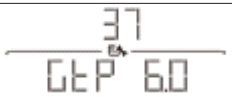
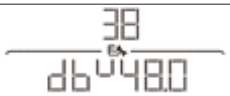
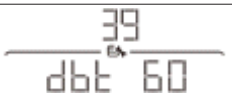
Program	Description	Setting Option	
06	Grid charging current		
		60A(default) Available options: 2/10/20/30/40/50/60/70/80/90/100/110/120A	
07	Maximum charging current		
		Set total charging current for solar and grid chargers. The default is 100A.Available options: 2/10/20/30/40/50/60/70/80/90/100/110/120A	
08	Menu Default		
		During setting:Set to ON. If the current page is not on the first page and no operation with 1 minute, the system will return to display the first page.Set to OFF. If the current page is not on the first page and no operation with 1 minute, the system will stay on the current page.	
09	Auto restart when overload occurs	The default is ON.	
10	Auto restart when over temperature occurs	The default is ON.	
11	Main input cut warning		
		Enable/Disable Grid or PV loss alarm.The default setting is ON. If the grid input detected lost, the buzzer will sound for 5 seconds. when set to OFF, after the grid input is lost, the buzzer will not sound.	
12	Energy-saving mode		
		The default setting is OFF. When set to ON, in battery mode, if the load is lower than 25W, the system will stop output for a period then resume. If the load is still lower than 25W, the system will do the loop stop then resume. If the load is higher than 35W, the system will resume continuous normal output.	
13	Overload transfer to bypass		
		The default setting is OFF. When set to ON, in the case of PBG (PV priority) or MKS (generator priority) mode, if there is an overload, the system will immediately transfer to bypass mode (grid power output, also known as bypass mode).	

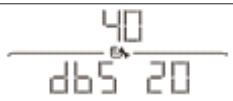
Program	Description	Setting Option	
14	Silent mode setting		
		Enable/disable buzzer sound.The default setting is OFF. When set to ON, in any situation such as alarms or faults, the buzzer will not sound. This setting can be applied to all modes .Button sound is not effected.	
15	Battery return to grid voltage point		
		When the battery is set to the CUS (Customer Setting Type) mode. The adjustable range is [40, 50V]. The default is 47.6V, and it can be adjusted within a range of [40, 50V].	
		When the battery is set to the AGM (Lead Acid Battery Type) or FLD (Flooded Battery Type) mode. The default setting is 46V, and it can be adjusted within a range of [44, 52V].	
		When the battery is set to LIB (Ternary lithium battery). The default value is 47.6V. It can be adjusted within a range of [40, 50V].When the battery is set to FEL (Lithium iron battery), the default value is 49.6V. It can be adjusted within a range of [40, 50V].	
16	Switching back to battery mode voltage points		
		When the battery is set to CUS (Customer Set Type) mode, The default setting is 54.4V, The voltage range is [46, 58V].	
		When the battery is set to AGM (Absorbent Glass Mat) or FLD (Flooded) mode,The default is 52V. It can be adjusted within a range of [48, 58V].	
		When the battery is set to LIB (Ternary lithium battery). The default value is 54.4V. It can be adjusted within a range of [46, 58V].When the battery is set to FEL (Lithium iron battery), the default value is 53.2V. It can be adjusted within a range of [46, 58V].	
17	Battery type	AGM(default)	
		Flooded	
		Lithium (Ternary Lithium Battery)	
		FEL (Lithium iron)	
		User-Defined	

Program	Description	Setting Option
18	Battery low voltage point	
		Battery low voltage alarm setting.When the battery type is set to LIB, the default setting is 47.6V. The adjustable range for the voltage is [41.2, 50V]. Initial settings for CUS are the same as for LIB.When the battery type is set to FEL, the default setting is 48V. The adjustable range for the voltage is [41.2, 50V].
		It is not possible to set the battery definition mode to AGM or FLD mode. The initial default setting is 44V.
19	Battery shutdown voltage point	
		The battery low voltage shutdown point setting function cannot be adjusted when the battery is defined as AGM or FLD mode. The default setting is 42V.
		When the battery type is set to LIB , the battery shutdown point can be modified. The default setting is 46V, and the adjustable range is [40, 48V]. Initial settings for CUS are the same as for LIB. When the battery type is set to FEL , the battery shutdown point can be modified. The default setting is 42V, and the adjustable range is [40, 48V].
20	Constant voltage mode voltage point setting	
		When the battery is defined in AGM or FLD mode, the voltage set point cannot be configured. The default setting for AGM mode is 56.4V, for FLD mode is 58V.When the battery type is CUS, It can be set within the range of [48, 60V] for the constant voltage charging set point. The default setting is 56.4V. It is important to note that the constant voltage set point voltage needs to be higher than the float charge set point voltage.
		When the battery type is set to LIB, the default constant voltage charging set point is 56.4V, and it can be adjusted within the range of [48, 60V]. When the battery type is set to FEL, the default constant voltage charging set point is 55.2V, and it can be adjusted within the range of [48, 60V].It is important to ensure that the constant voltage set point voltage is higher than the float charge set point voltage.

Program	Description	Setting Option
21	Floating charge mode voltage point setting	
		When battery is defined as AGM or FLD mode, the voltage set point cannot be configured. The default setting for AGM/FLD mode is 54V. When the battery type is CUS, It can be set within the range of [50, 58V] for the floating charging voltage set point. The default is 55.2V.If the battery type is LIB, the default setting for the floating charging point is 55.2V. The setting range is [50, 58V]. If the battery type is FEL, the default setting for the floating charging point is 54.4V. The setting range is [50, 58V]. It is important to note that the constant voltage point voltage should always be set higher than the floating charge point voltage.
22	Grid low voltage point setting	
		If intput mode is APP/GEN, Grid low voltage point can be set within a range of 90V to 154V. The default setting is 154V.If intput mode is UPS, Grid low voltage point can be set within a range of 170V to 200V. The default setting is 185V.
23	Grid high voltage point setting	
		If input mode is APP/GEN, Grid high voltage point can be set within a range of 264V to 280V. The default setting is 264V.If input mode is UPS, Grid high voltage point is set as 264V.
24	Automatic turn off backlight	
		The default setting is ON. If ON, the backlight will turn off after 1minutes of no button operation.
25	Inverter soft start setting	
		Default setting is OFF.If it set to ON, the inverter output gradually increases from 0 to the target voltage value. If OFF, the inverter output directly increases from 0 to the target voltage value.Setting Condition: It can be set in single-machine operation mode.
26	Reset factory setting	
		Restore all settings to factory default values.Before the setting, this interface is displayed as OFF. When set to ON, the system will restore to default settings. After the setting is completed, this interface will display OFF again.The setting can be applied immediately in mains and standby modes, but cannot be set in battery mode.

Program	Description	Setting Option
29	Battery Disconnection Alarm	
		Enable/Disable battery disconnection alarm.Default setting is OFF. When set to OFF, there will be no battery disconnection alarm when the battery is disconnected.
31	Equalization Voltage Point Setting	
		The default setting for FEL battery type is 56V, setting range is [48, 60V]. The default setting for AGM/FLD/LIB/CUS battery type is 58.4V, with a configurable range of [48, 60V].
32	Equalization Charging Time Setting	
		The function can be set as 'OFF' or active.During the equalization stage, the controller will charge the battery as much as possible until the battery voltage rises to the battery equalization voltage. Then, it will adopt constant voltage regulation to maintain the battery voltage. The battery will remain in the equalization stage until the set battery equalization time is reached. The setting range is [5, 900] with 5 minutes for every step.The default setting is OFF.
33	Equalization Delay Time Setting	
		The function can be set as 'OFF' or active.During the equalization stage, if the battery equalization time expires and the battery voltage has not risen to the battery equalization voltage point, the charging controller will extend the battery equalization time until the battery voltage reaches the battery equalization voltage. When the battery equalization delay setting is completed and the battery voltage is still below the battery equalization voltage, the charging controller will stop equalization and return to the floating stage. The default setting is 120 minutes, with a configurable range of [5, 900], and an increment of 5 minutes for each setting.
34	Equalization Interval Time Setting	
		When the battery connection is detected during the float phase with the equalization mode turned on, the controller will start to enter the equalization phase when the set equalization interval (cell equalization period)is reached.The default setting is 30 days, the settable range is[1,90], and the increment of each setting is 1 day.

Program	Description	Setting Option
35	Enable Equalization Immediately	
		The default setting is OFF, the function is not turned on; when it is set to ON, in the float charging stage when the equalization mode is turned on and the battery connection is detected. The balance charging is activated immediately, and the controller will start to enter the equalization stage.
36	Grid-tie inverter function	
		Set whether the inverter is grid fed or not. If the value is 'INT',the inverter can feed to grid according to different output source priority.In PGB mode when battery level is sufficient, as long as grid is connected, PV can feed energy to grid as much as possible and surplus energy of PV charges the battery.In PGB mode when battery level is NOT sufficient, PV charges battery as much as possible and surplus energy of PV feeds to grid. In GPB mode and PBG mode, as long as grid is connected, PV charges battery as much as possible and surplus energy of PV feeds to grid.In MKS mode, inverter does not feed to grid.
37	Max Grid Tie Power	
		Setting the output power value to grid. The default is 6.0kW. The setting range is [0, 6.0]kW. Every setting step is 0.5kW.
38	Battery dual output low voltage shutdown point	
		When enabled, the secondary output of the inverter is enabled by default. In battery mode, when the battery voltage drops below the set point, the secondary output is turned off. When the battery voltage rises above the set value plus 1V per additional battery cell, the secondary output is turned on.The default setting of 48V, with a configurable range of [44, 60]V. When the set point is higher than the constant voltage charging (CV) point - 1V per cell, the recovery voltage is set to the constant voltage charging point.
39	Battery dual output duration	
		When enabled, the secondary output of the inverter is enabled by default. In battery mode, when the battery discharge time reaches the set point, the secondary output is turned off.Default setting is OFF, the function is not enabled. The configurable range is [5,900] in minutes.When set to FUL, the secondary output has unlimited output time.

Program	Description	Setting Option
40	SOC Dual output battery mode cut-off SOC	
		When enabled, the secondary output of the inverter is enabled by default. In battery mode, when the battery SOC is lower than the set value, the secondary output is turned off. After the battery voltage is 5% higher than set value, the secondary output will turn on.Default value is 20. The setting range is [5, 90] and OFF.
44	BMS Communication Function	
		The default setting is OFF, and the function is not enabled. When set to a specific BMS protocol, the inverter communicates with the lithium battery BMS through the centralized control board and obtains battery information. If the communication is abnormal after the function is enabled, alarm 56 is generated, and the inverter does not determine the running logic based on the BMS information. CVT: CVTE protocol (485) PYL: PYLON protocol (485 and CAN) GRO: GROWATT protocol (485 and CAN) VOL: VOLTRONIC protocol (485) IRO: China Tower protocol (485) PAR: PACE RTU protocol (485)
45	BMS ID	
		Setting BMS ID number to communication with. The setting value is AtO or numerical value [0, 15]. Among them, A-F represents 10-15 respectively.The default value is auto (AtO). When set to auto (AtO), system will automatically poll the BMS ID from small to large. When system poll for the first ID with a correct response, it locks the ID and only asks the BMS with that ID.
46	Low SOC Shutdown	
		Set the inverter to shut down when the State of Charge (SOC) of the battery is low.Default setting is 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 generates alarm 68. The alarm 68 is cleared when the SOC returns to the set value + 5%. In standby mode, the inverter can switch to battery mode only when the SOC reaches the set value + 10%. If it does not reach this threshold, alarm 69 is generated. Once the function is enabled, alarm 69 is triggered when the lithium battery SOC reaches the set value + 5%, and it is cleared when it returns to the set value + 10%.It can be set to OFF, in which case the inverter no longer performs shutdown, startup, or alarm operations based on the SOC condition. Once the function is enabled, if a communication abnormality occurs, the inverter no longer operates based on the SOC information and clears the related alarms.

Program	Description	Setting Option
47	High SOC to Battery	
		Set the SOC value for the inverter to switch to battery mode. Default setting is 90, with a configurable range of [10, 100]. In PBG priority mode, when the lithium battery SOC reaches the set value in normal grid mode, the inverter switches to battery mode. Once enabled, the inverter will only switch to battery mode when the SOC is above the set point and the battery voltage is higher than the voltage point to switch back to battery mode.It can be set to OFF, in which case the inverter no longer switches from grid mode to battery mode based on the SOC condition.Once the function is enabled, if a communication abnormality occurs, the inverter no longer operates based on the SOC information and clears the related alarms.
48	Low SOC to Grid	
		Set the SOC value for the inverter to switch to grid mode.The default setting is 50, with a configurable range of [10, 90].In PBG priority mode, when the lithium battery SOC reaches the set value in battery mode, the inverter switches to grid mode. Once enabled, the inverter will switch to grid mode when the SOC is below the set point or the battery voltage is lower than the voltage point to switch back to grid mode It can be set to OFF, in which case the inverter no longer switches from battery mode to grid mode based on the SOC condition.Once the function is enabled, if a communication abnormality occurs, the inverter no longer operates based on the SOC information and clears the related alarms.When this setting is higher than the STB point, STB and STG will no longer take effect after the next activation.
61	Battery Max. Discharge Current	
		The default setting is OFF. The inverter will not limit the battery discharging current when setting to OFF.When set to a numerical value, it indicates the limitation current value. The setting range is [10, 140A] with a setting step of 5A. If the discharging current is over the limitation, alarm 60 will occur. If the continuous over-current time reaches 5 seconds, fault 14 will occur and inverter goes into fault mode.

5.3 Battery status display

5.3.1 LED display description

State of system	Event	Run LED8	Alarm LED7	SOC					
				LED6	LED5	LED4	LED3	LED2	LED1
		●	●	●	●	●	●	●	●
Power off	Sleep	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
static state	Normal	Flash1	OFF	Display based on specifc State of SOC					
	Alarm	Flash1	Flash3						

5.3.2 display description)

SOC Display Description

State			Charging						Discharging					
LED		LED6 ●	LED5 ●	LED4 ●	LED3 ●	LED2 ●	LED1 ●	LED6 ●	LED5 ●	LED4 ●	LED3 ●	LED2 ●	LED1 ●
SOC(%)	0~16.6%	OFF	OFF	OFF	OFF	OFF	Flash2	OFF	OFF	OFF	OFF	OFF	ON
	16.6~33.2%	OFF	OFF	OFF	OFF	Flash2	ON	OFF	OFF	OFF	OFF	ON	ON
	33.2~49.8%	OFF	OFF	OFF	Flash2	ON	ON	OFF	OFF	OFF	ON	ON	ON
	49.8~66.4%	OFF	OFF	Flash2	ON	ON	ON	OFF	OFF	ON	ON	ON	ON
	66.4~83.0%	OFF	Flash2	ON	ON	ON	ON	OFF	ON	ON	ON	ON	ON
	83.0~100%	Flash2	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
RUN LED ●		ON						Flash 3					

6. Turn on/off the device.

6.1 Turn on the device

- Turn on the battery switch on the side of the device; the battery operation light and power level lights will illuminate.
- Press the inverter toggle switch on the side of the device; the screen and indicator lights will turn on, indicating the device has been activated.
- Close the circuit breakers for photovoltaic input, AC input, and AC output in sequence.
- Turn on the loads one by one in order of increasing power consumption.

6.2 Turn off the device

- Disconnect the loads one by one in ascending order of their capacity;
- Disconnect the AC output circuit breaker;
- Disconnect the AC input circuit breaker;
- Disconnect the PV input circuit breaker;
- Turn off the inverter switch and turn off the battery switch.

7. Fault and Alarm

7.1 Fault Reference Code

Fault display:

Function description: If alarm occurs, Fault indicator flashes and buzzer sounds every one second for 1 minute, then stop. If fault occurs, the fault indicator is always on, the buzzer sounds 10 seconds then stops. System will try restart aromatically. If the machine does not work after six times' restart, the machine and LCD display will always in the fault status. You need to completely power off (off the screen) or wait for 30 minutes to restart the machine. The fault LCD display is shown in the figure above. In fault mode fault icon is bright, in alarm state alarm icon is flashing, and contact the manufacturer to troubleshoot the abnormal situation according to the fault information.

Fault: The inverter enters fault mode, with a constant red LED light and LCD displaying a fault code.Fault code sheet

Fault code sheet:

Fault code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault/ Alarm
1	Bus soft boost start failed	Turn fault mode	Bus voltage does not reach set value for more than 30 seconds	Cannot restore	Fault
2	Bus voltage high	Turn fault mode	The bus voltage is higher than protection point	Cannot restore	Fault
3	Bus voltage low	Turn fault mode	Bus voltage is below the under voltage protection point	Cannot restore	Fault
4	Battery over	Turn fault mode	The battery experienced an instantaneous overcurrent exceeding 580A, triggering immediate protection.	Cannot restore	Fault
5	Over temperature	Turn fault mode	The PFC temperature exceeds the protection threshold.Fan stuck for more than 5 minutes	Tried to restart six times,if failed,cannot restore	Fault
6	Battery high voltage	Turn fault mode	Battery voltage is higher than set value.	Restore after voltage is lower set value	Fault
7	Bus soft start fault	Turn fault mode	The soft start process has exceeded but the bus voltage has not reached set value.	Cannot restore	Fault

Fault code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault/ Alarm
1	Bus soft boost start failed	Turn fault mode	Bus voltage does not reach set value for more than 30 seconds	Cannot restore	Fault
2	Bus voltage high	Turn fault mode	The bus voltage is higher than protection point	Cannot restore	Fault
3	Bus voltage low	Turn fault mode	Bus voltage is below the under voltage protection point	Cannot restore	Fault
4	Battery over	Turn fault mode	The battery experienced an instantaneous overcurrent exceeding 580A, triggering immediate protection.	Cannot restore	Fault
5	Over temperature	Turn fault mode	The PFC temperature exceeds the protection threshold.Fan stuck for more than 5 minutes	Tried to restart six times,if failed,cannot restore	Fault
6	Battery high voltage	Turn fault mode	Battery voltage is higher than set value.	Restore after voltage is lower set value	Fault
7	Bus soft start fault	Turn fault mode	The soft start process has exceeded but the bus voltage has not reached set value.	Cannot restore	Fault
8	Bus short circuit	Turn fault mode	Inverter on or PFC on,bus voltage below threshold.	Cannot restore	Fault
9	Inverter soft start fault	Turn fault mode	The bus voltage is higher than protection point,or the DC component is greater than 20V,or the inverter is not completed within 5 minutes.	Cannot restore	Fault
10	INV over voltage	Turn fault mode	The inverter voltage is higher than the set value[276V].	Cannot restore	Fault
11	INV under voltage	Turn fault mode	Battery mode and there is short circuit in the inverter,the inverter voltage is lower than 160V.	Cannot restore	Fault
12	INV short circuit	Turn fault mode	In battery mode or Standby mode,if the inverter voltage is lower,current is greater than set value.	Tried to restart six times,if failed,cannot restore.	Fault
13	Negative power protection	Turn fault mode	In battery mode the load power is llower than set value(negative power,such as -1200WW)	Cannot restore	Fault
14	Over load	Turn fault mode	Overload exceeds limit (list in specification).	Tried to restart six times, if failed, cannot restore.	Fault

Fault code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault/ Alarm
15	Model fault	Turn fault mode	Cannot match any model in model number detection.	Cannot restore. Check whether the control board is assembled incorrectly or whether the program is burned incorrectly.	Fault
16	No boot loader	Turn fault mode	No boot loader.	TIDA1911000000000000。 Cannot restore. Try to send command TIDA1911000000000000.	Fault
26	BMS fault	Turn fault mode	Error code in BMS message.	Turn off BMS communication function or BMS fault recovery.	Fault
28	NTC fault	Turn fault mode	NTC open circuit	Cannot restore	Fault
29	Inverter over current	Turn fault mode	Instantaneous current of inverter is higher than set value.	Tried to restart six times, if failed, cannot restore.	Fault

7.2 Alarm Reference Code

Alarm: the inverter does not enter the fault mode, LED red light flashing, LCD displays the Alarm code.

Alarm code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault/Alarm
50	Battery open	Alarm,battery does not charge	Battery voltage is below set point	Restore after battery voltage recover	Fault/Alarm
51	Battery low voltage shutdown	Alarm,battery low voltage shutdown or cannot power on.	Battery voltage is below set point	Reatore after battery voltage recover	Fault/Alarm
52	Battery low voltage	Alarm	Battery voltage is below set point	Restore after battery voltage recover	Fault/Alarm

Alarm code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault/Alarm
54	Low power discharge	Alarm	The battery voltage is greater than 26.4V and the discharge time exceeds the set low-power discharge time.	Restore after battery voltage recover	Fault/Alarm
55	Battery over charge	Alarm,battery does not charge.	Battery voltage is higher than the set value	Can restore	Fault/Alarm
56	BMS disconnect	Alarm,lock standby mode.	No correct BMS communication response within 10 seconds.	Restore after communication recover	Fault/Alarm
57	Over temperature	Alarm,battery does not charge	The temperature of PFC or INV is above the set value.	Restore after temperature is under set value.	Fault/Alarm
58	Fan error	Alarm,if one fan fails and the other fan is running an full speed.	Fan speed is less than the set value.	Restore after fan recover	Fault/Alarm
59	EEPROM error	Alarm	Numerican calibration error	Restore after calibration right	Fault/Alarm
60	Overload	Alarm,battery does not charge.	When not in mains mode or the PV is normal and the output prionity is not mains priority,the load exceeds 102% and the duration is 200-220ms.	Restore after load back to normal	Fault/Alarm
61	Abnormal generator waveform	Alarm,continuously peerating in battery mode	Generator waveforn detection result is abnormal	Can rsstore	Fault/Alarm
62	PV Energy weak	Alarm,turn off PV output and charging	When the battery is not connected,the bus voltage is lower than the set value.	Restore after 10mins	Fault/Alarm

Alarm code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault/Alarm
68	SOC Under	Alarm,turn standby mode.	Lithium battery SOC is lower than the set value	Restore after turning off the low SOC shutdown function or turning off the BMS communication function,or when the SOC returns to the set value+5%.	Fault/Alarm
69	SOC Low	Alarm,if it is in standby mode,it will remain in standby mode and not power on.	Lithium battery SOC is lower than the set value+5%(mains mode or battery mode),lower than the set value+10%(standb y mode).	Restore after turning off the low SOC shutdown function,or turning off the BMS communication function,or when the SOC returns to the set value+10%	Fault/Alarm
70	Battery terminal source fail	Alarm,turn standby mode	Battery is not connected and the voltage of battery termial is lower than set value.	Restore after battery is detected or detected that the battery terminal voltage exceeds the set value for one consecutive minute	Fault/Alarm

7.3 Truble Shooting

Problem	Fault Event	Trigger conditions	Solution method
LED screen display fault code 5	Overtemp erature	1.PFC temperature exceeds the protection threshold [85°C when not locked rotor, 65°C when locked rotor] for more than 20 seconds.2.Fan lock exceeds 30 seconds.	Please check if the fan is not connected or if there are loose wiring issues. If the fan is not connected for more than 30 seconds, the machine will report fault code 5.
LED screen display fault code 12	Inverter short circuit	In battery mode or standby mode, if the inverter voltage is lower than 100V and the inverter current is greater than 40A, it should respond within 80-100ms.	1.Check if there is a short circuit at the output terminals (such as a screw piercing through the locking terminal causing a LN short circuit).2.Verify if the inverter voltage and inverter current meet the triggering conditions.
LED screen display fault code 15	Model malfuncti on	The model number detection does not match any model number.	Check if the control board is assembled incorrectly or if the program is burned incorrectly.
LED screen display fault code 16	No boot program	The third digit of the communication is not 1.	Send command: TIDA1911000000000000

Problem	Fault Event	Trigger conditions	Solution method
20LED screen display fault code 20	CAN communication error	In battery mode, if the battery mode is set to mains power mode and the parallel mode is set to mains power mode, the number of responses from the slave devices does not match the previously defined number of slave devices. Receiving communication from two or more devices with a slave number of 0 consecutively.	1.Check if the parallel mode is set but the machine is turned on in single machine mode.2.Check if the parallel connection cable and the parallel board are connected according to the parallel SOP (Standard Operating Procedure).
LED screen display fault code 58	Fan malfunction	Any of the fans rotating less than 8 times within 2 seconds.	1.Check if the fan is not connected properly or if there are any loose connections.2.If the fan is properly connected:a)Check if there is any issue with the fan detection circuit, usually caused by excessive soldering nderneath the control board socket.b)Check if the fan itself is damaged.
Unable to start	Battery	Due to the need for a voltage of ≥23V to start the machine in battery mode, common reasons for failure to start include improper calibration or insufficient battery voltage.	1.Check if the battery voltage sampling is functioning properly and if the battery voltage has been calibrated.2.Use a multimeter to measure the voltage at the battery terminals (using a DC power supply or a real battery) to see if it reaches the minimum voltage of 23V per cell for startup. Note: It is crucial to configure the battery voltage according tothe machine model. Connecting the wrong battery voltage can cause capacitor explosion.
AC Fault	Utility power		1.Check for any short circuits at the mains terminal (such as a screw piercing through and causing a short circuit between the live and neutral terminals).2.Check if there are any wiring errors, such as mistakenly connecting the mains input to the output terminals.

Problem	Fault Event	Trigger conditions	Solution method
PV Fault	PV		1.Check if the PV input voltage is too close to the critical threshold.2.For low voltage versions of the machine, check if the software version numbers of the main control is compatible. If the software versions differ significantly, the machine may not be activated.
PV not charging			1.For low voltage versions of the machine, check if the software version numbers of the main control is compatible. If the software versions differ significantly, the machine may not be activated.2.Connecting the wrong battery voltage can result in damage to the auxiliary power supply on the PV side, causing a loss of power and inability to communicate with the main control.

8. Explanation of Improper Operations

8.1 Charge

Charging current: Do not surpass the biggest charging current which in this specification.

Charging voltage: Do not surpass the highest voltage which in this specification.

Charge temperature: The charge temperature is in according to this specification.

First constant current after constant voltage charging, reverse charging is prohibited. It can be dangerous if the battery is charged upside down.

8.2 Discharge

Discharge current: Do not surpass the biggest discharge current which in this specification.

Discharge voltage: Do not be less than the lowest voltage which is in this specification.

Discharge temperature: The discharge temperature is in according to this specification.

8.3 Over-discharge

After the short time excessively discharges charges immediately cannot affect the use, but the long time excessively discharges can cause the battery the performance, battery function losing. The battery long-term has not used, has the possibility to be able to be at because of its automatic flashover characteristic certain excessively discharges the condition, for prevented excessively discharges the occurrence, the battery should maintain the certain electric quantity.

8.4 Storage

The battery should store in the product specification book stipulation temperature range. If has surpasses above for 3 months the long time storage, suggested you should carry on additional charge to the battery.

8.5 Continuous charging time

Please do not continuously charge the battery over 8 hours.

8.6 Warnings

To prevent the possibility of the battery from leaking, heating, fire, Please READ this specification carefully before usage and observe the following precautions:

(1)Prohibit to let battery pack bareness on outdoor for rain.

(2)Do not use and leave the battery near a heat source as fire or heater.

(3)Do not reverse the position and negative terminals.

(4)Do not connect the battery to an electrical outlet.

(5)Do not discard the battery in fire or heat it.

(6 It is forbidden to directly short - circuit the positive and negative poles of the battery with metal.

(7) Prohibit hitting, throwing, or stepping on the battery.

(8) Prohibit directly welding the battery and piercing the battery with nails or other sharp objects.

(9) During handling, assembly, and testing processes, the battery box should be prevented from being inverted.

(10) During charging and discharging, it is strictly forbidden to cover the battery box with other objects. Otherwise, heat will accumulate, leading to problems such as performance degradation and leakage of the battery.

(11) Users cannot open the battery cabinet without permit, prohibit to break down battery pack, to avoid breakinsulation to short circuit and effect on usage.

(12) Prohibit to refit battery pack. The manufacturer install protection system for it in order to prevent danger, if protect system broken, it leads that charge cannot control properly, or charge and discharge current is beyond than the set value, to its leakage, heat and fracture.

9. Maintenance

9.1 Maintenance

In order to ensure the continuous operation of the ED3000-E0_8-A household energy storage system series power supply, frequent maintenance and maintenance are required.

1) The installation and storage of the power supply should avoid high corrosive, high dust, high temperature and high humidity environment. In particular, metal materials should be prevented from falling into the cabinet.

2) Regularly check if the cable is aging and the cable connection point is tight and safe.

3) Clean the cooling fan regularly and check if the fan is normal. Specific maintenance requirements:

◎ Clean internal dust and debris in the equipment cabinet

(Technical Note: The key focus is to remove dust from the heat dissipation channels, dust-proof sponges, fan blades, and the surfaces of electrical components, so as to prevent heat dissipation issues or short-circuit risks caused by dust accumulation.)

◎ Inspect terminal blocks and fastening screws inside the cabinet

(Technical notes: Use a torque wrench to verify terminal block tightness according to manufacturer specifications to prevent overheating risks caused by increased contact resistance)

◎ Check cabinet for damage marks and heat-induced deformation/discoloration

(Technical notes: Carefully examine metal surfaces for oxidation/discoloration and plastic components for embrittlement / cracking - typical signs of heat damage. Infrared thermometer is recommended for auxiliary inspection)

◎ Examine internal wiring for signs of aging

(Technical notes: Specifically check for insulation cracking, conductor oxidation, and corrosion at connection points, with particular attention to high-load circuits and cable bend areas)

9.2 After-sales service

In order to make users feel satisfied, the company is dedicated to organizing a well-trained high-level technical team to engage in after-sales service. Please carefully feedback the user information to us so that we can master it in time and serve you better.

The company solemnly promises: all product quality problems, from the date of delivery, within five years warranty, lifetime maintenance.

Welcome to browse our website, we will post the company's latest product information and new product news on the website in time. If you have application solutions for other power products, we are willing to cooperate with you!

9.3 Others

(1) The customer is requested to contact our company in advance, if and when the customer needs other applications or operating conditions than those described in this document. Additional experimentation may be required to verify performance and safety under such conditions.

(2) our company will take no responsibility for any accident when the battery is used under other conditions than those described in this Document.

(3) our company will inform, in a written form, the customer of improvement(s) regarding proper use and handing of the battery, if it is deemed necessary.

(4) Any matters not mentioned in this manual shall be determined through negotiation between both parties.

10. Revision and statement of product description

We have the right to revise this specification. We'll inform our customers after revision.

If any matters with this specification arise, it shall be revised by mutual agreements.

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