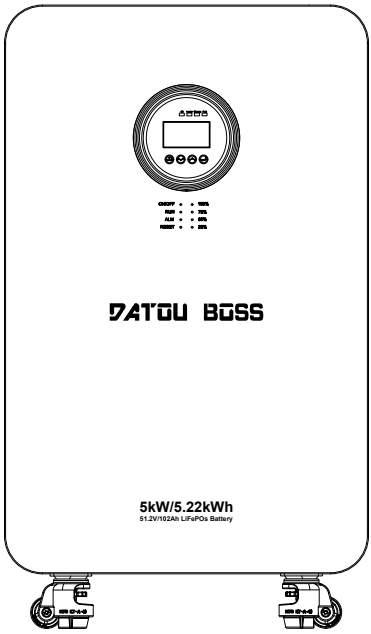
USER MANUAL

All-In-One Home Energy Storage

DT-5052



1. SECURITY INSTRUCTIONS

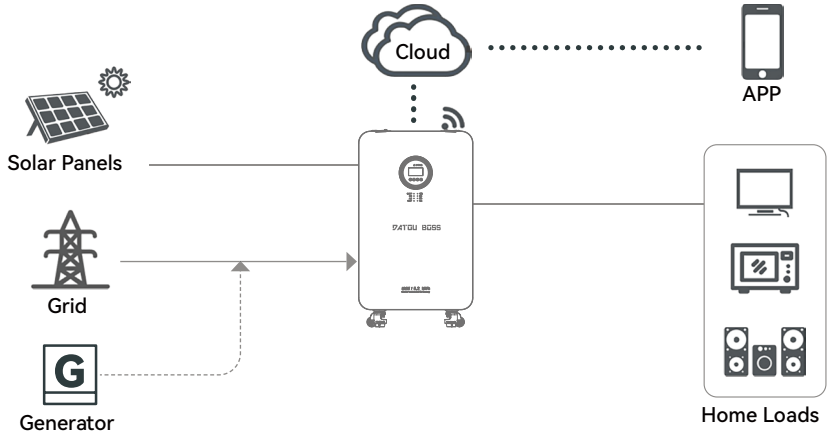
Please retain this manual for future reference. This manual contains instructions for the installation as well as operation of the Home Storage Battery Pack. Please read all instructions and precautions in the manual carefully before installation and use. There are non-safe voltages inside the home energy storage battery pack, to avoid personal injury, users should not disassemble it by themselves, and contact our professional maintenance personnel if maintenance is needed.

1. Do not put the battery into water or get it wet!
2. Do not charge the battery in a source of ignition or in extremely hot conditions! Do not use or store batteries near sources of heat such as fire or heaters! If the battery leaks or emits an odor, remove it immediately from close proximity to an open flame!
3. Please use a dedicated charger!
4. Do not reverse the positive and negative terminals!
5. Do not connect the battery directly to a wall outlet or vehicle cigarette lighter outlet!
6. Do not put the battery into a fire or heat the battery!
7. It is prohibited to short-circuit the positive and negative terminals of the battery with wires or other metal objects, and it is prohibited to transport or store the battery together with necklaces, hairpins or other metal objects!
8. Do not pierce the battery case with nails or other sharp objects, and do not hammer or foot the battery!
9. Do not hit, throw or subject the battery to mechanical shocks!
10. Direct soldering of battery terminals is prohibited!
11. It is prohibited to disassemble the battery in any way!
12. It is prohibited to place the battery in a microwave oven or pressure vessel!
13. Prohibit the use of batteries in combination with primary batteries (e.g. dry cell batteries) or batteries of different capacities, models and varieties!
14. Do not use the battery if it emits a strange odor, heat, deformation, discoloration or any other abnormal phenomenon; if the battery is in use or charging, it should be immediately removed from the appliance or charger and stop using it!

2. ATTENTION

1. Do not put the battery in an extremely hot environment, which will affect the performance of the battery, shorten the service life of the battery; and even cause safety accidents.
2. If the electrolyte gets into your eyes after a battery leak, do not rub, flush with water, and seek medical assistance immediately. If left untreated, the eyes will be damaged.

3. SOLAR ENERGY STORAGE SYSTEM

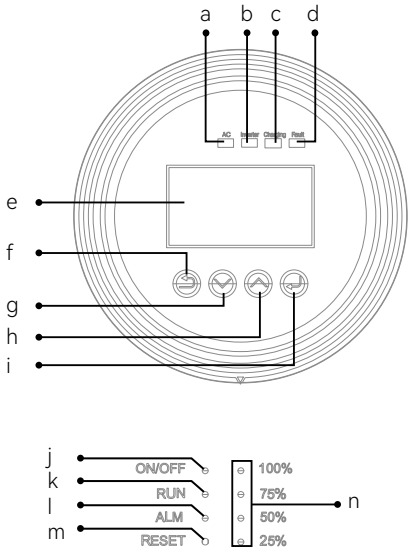


4. SPECIFICATION

OVERALL PARAMETERS	
Product Model	DT-5052
Battery Type	LiFePO4 Battery 102Ah
Battery Capacity	5.22kWh
Dimensions	480×220×830mm
Weight	57.3kg
Nominal Voltage	51.2V
Battery Cycle Life	≥ 6000 cycles/70%DOD@25° C
Nominal Capacity	102Ah
Charge Current	50A (Max. 100A)
Discharge Current	100A (Max.120A)
Full Charge Voltage	58.4Vdc
Discharge Cut-Off Voltage	43.2Vdc
Operating Temperature	-10℃ ~50℃
Storage Temperature	0℃ ~45° C
Screen Type	LCD
Parallel Function	not have
On-grid Function	not have
Self-Consumption Power Off	≤ 300uA

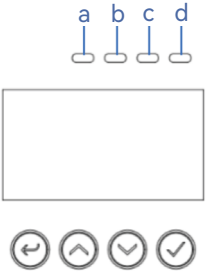
INVERTER INPUT	
Voltage Range	170~280Vdc (computer equipment)
Frequency Range	40~70Hz, Default
PV Input Voltage Range	120~450Vdc
PV Maximum Charging Current	100A
INVERTER OUTPUT	
Output System	L+N+PE
Output Voltage	208/220/230/240Vac
Output Precision	≤ ±5%
Power Factor	1
Output Frequency	Utility Mode: Follows utility frequency Battery Mode: 50/60Hz±0.1%
Output Harmonic Distortion	≤ 3% Linear Load ≤ 5% Non-linear load PF=0.7
Switching Time	Computer equipment: line mode to battery mode 10 ms (normal) Household electrical equipment: line mode to battery mode 10 ms (general)
Overload Capability	1min@102%~ 110% Load 10s@110%~ 130% Load 3s@130%~ 150% Load 0.2s@>150% Load
Output Power	5kW
BATTERY	
Charging Mode	AC Charging / PV Charging
Charging Current	50A (Max100A)

5. LCD SCREEN OPERATING INSTRUCTIONS



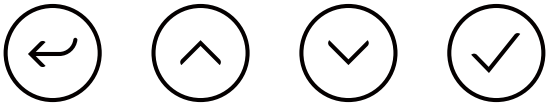
a.	AC Indicator	**e.**	LCD Display	**j.**	Switching Indicator
b.	Invert Indicator	**f.**	ESC Button	**k.**	Operation Indicator
c.	Charging Indicator	**g.**	Up Button	**l.**	Alarm Indicator
d.	Fault Indicator	**h.**	Down Button	**m.**	Reset Button
		i.	Enter Button	**n.**	Battery Indicator

5.1 Operation And Display Panels



LED IndicatorM			essages
a AC	Status indicator (Green)	Solid On	The mains power is normal and enters the mains power operation.
		Flashing	The mains power is normal, but it has not entered mains power operation.
		Off	The mains power is abnormal.
b Inverter	Invert indicator (Yellow)	Solid On	Output is powered by battery or PV in battery mode.
		Off	Other states.
c Charging	Charging indicator (Yellow)	Solid On	The battery is in float charging.
		Flashing	The battery is in constant voltage charging.
		Off	Other states.
d Fault	Fault indicator (Red)	Solid On	Fault occurs in the inverter.
		Flashing	Warning condition occurs in the inverter.
		Off	The inverter is working properly.

5.2 Function Buttons



Button	Description
ESC	To exit setting mode
UP	To go to previous selection
DOWN	To go to next selection
ENTER	To confirm the selection in setting mode or enter setting mode

5.3 LED Indication Description

ON/OFF •

RUN •

ALM •

Table 1 LED Operating Status Indications

Status	Normal/ Warning/ Protection	On/Off	Run	Alm	Power Indicator Led				Explanation
		●	●	●	●	●	●	●	
Shutdown	Dormant	Out	Out	Out	Out	Out	Out	Out	Out
Standby	Normal	Light	Flash 1	Out	According To The Power Indication				Standby Status
	Alarm	Light	Flash 1	Flash 3					Module Low Voltage
Charge	Normal	Light	Light	Out	Based On Power Indication (Power Indicator Led Flashes Up To 2)				Maximum Charge Led Flashing (Flash 2), Overcharge Alarm Alm Not Flashing
	Alarm	Light	Light	Flash 3					
	Overcharge Protection	Light	Light	Out	Light	Light	Light	Light	If There Is No Utility Power, The Indicator Light Is In Standby Mode
	Temperature, Overcurrent, Failure Protection	Light	Out	Light	Out	Out	Out	Out	Stop Charging
Discharge	Normal	Light	Flash 3	Out	According To The Power Indication				
	Alarm	Light	Flash 3	Flash 3					
	Undervoltage Protection	Light	Out	Out	Out	Out	Out	Out	Stop Discharge
	Temperature, Overcurrent, Short-Circuit, Reverse Connection, Failure Protection	Light	Out	Out	Out	Out	Out	Out	Stop Discharging
Lose Effectiveness		Light	Out	Light	Out	Out	Out	Out	Stop Charging And Discharging

- 100%
- 75%
- 50%
- 25%

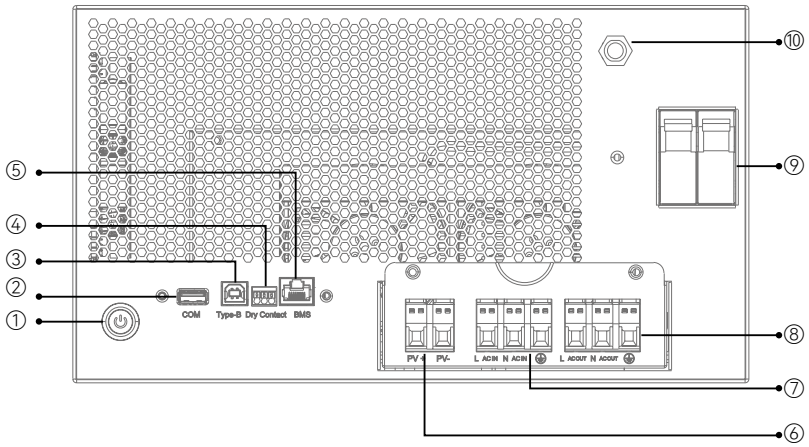
Table 2
Description of Capacity Indication

Status		Charging				Discharging			
Capacity Indicator		L1	L2	L3	L4	L1	L2	L3	L4
		●	●	●	●	●	●	●	●
Power Indicator	0~25%	Out	Out	Out	Flash 2	Out	Out	Out	Light
	26~50%	Out	Out	Flash 2	Light	Out	Out	Light	Light
	51~75%	Out	Flash 2	Light	Light	Out	Light	Light	Light
	76~100%	Flash 2	Light	Light	Light	Light	Light	Light	Light
Operation Indicator Light ●		Light				Flashing (flash 3)			

Table 3
LED flashing description

Flashing Mode	Light	Out
Flash 1	0.25s	3.75s
Flash 2	0.5s	0.5s
Flash 3	0.5s	1.5s

6. FEATURE DESCRIPTION



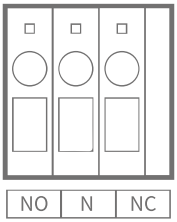
① . Power switch button
② . Wifi/GPRS Communication Port
③ . USB Communication Port
④ . Dry Contact
⑤ . Bms Communication Port
⑥ . PV Input
⑦ . AC Input
⑧ . AC Output
⑨ . Air Circuit-Breaker
⑩ . Anti-Surge Protection Switch

6.1 Dry Junction Function

Working principle: This dry junction can control the diesel generator switch to charge the battery.

① . Normally, this terminal is closed at NC-N and closed at NO-N;

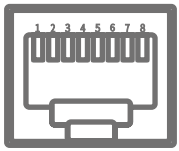
② . When the battery voltage reaches the low voltage disconnect voltage point, the coil of the relay is energized and becomes NO-N point closed and NC - N point disconnected, at this time, the NO-N point can drive resistive loads 125VAC/1A, 230VAC/1A, 30VDC/1A.



6.2 RS485 Communication Function

The pins are defined as shown:

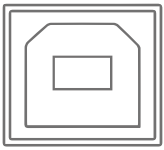
RS485: pin 1 is RS485-B, pin 2 is RS485-A, pin 4 is CAN-H, pin 5 is CAN-L.



RS485

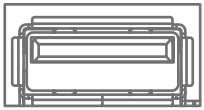
6.3 USB Communication Function

This port is a USB communication port, through which you can communicate with the optional software of our host computer (application required), and you need to install the corresponding "USB to Serial Chip CH340T Driver" in your computer to use this port.



6.4 Smart Communication Stick Connection(Optional)

The smart communication stick is used to connect to the cloud platform. Please insert the stick into COM port directly.



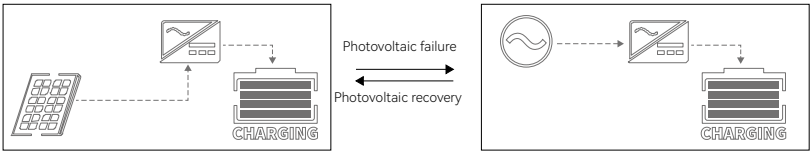
COM

7. OPERATING MODE

7.1 Charge Mode

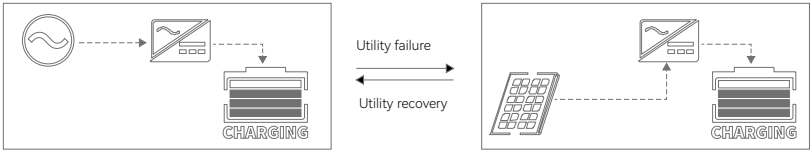
7.1.1 PV Priority

PV priority charging, utility charging is activated only when PV fails. Making full use of solar power during the day and switching to utility charging at night maintains battery power and is used in areas where the grid is relatively stable and electricity prices are more expensive.



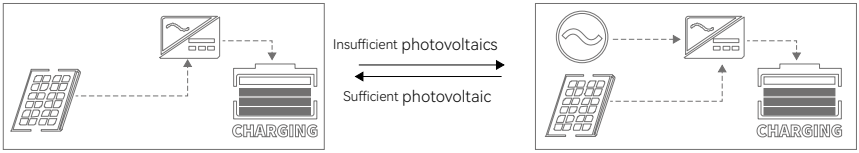
7.1.2 Utility Priority

The utility prioritizes the charging of the battery and only activates the PV charging when the utility is ineffective.



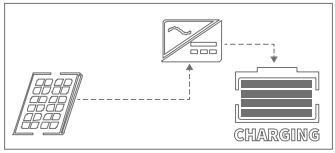
7.1.3 Hybrid charging

PV and utility hybrid charging, prioritizing PV MPPT charging, when PV energy is insufficient, utility power will supplement. When the PV energy is sufficient, the utility stops charging. This is the fastest way of charging, suitable for areas with unstable power grids, and can provide sufficient backup power supply at any time.



7.1.4 Only Solar

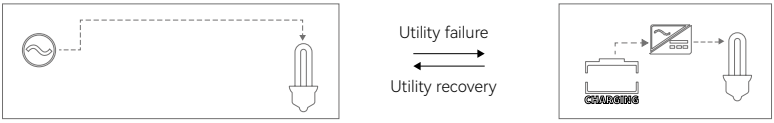
Only photovoltaic charging, not utility charging. This is the most energy efficient way, the battery power comes from solar energy, usually used in areas with good lighting conditions.



7.2 Output Modes

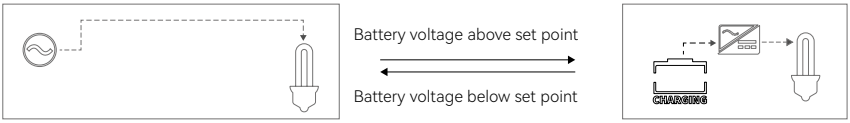
7.2.1 Utility Priority Mode

Switch to battery inverter power supply only when there is no utility power, and switch to utility charging and power supply when there is utility power. The device is equivalent to a backup UPS, used in areas with unstable power grids. Switching does not affect PV charging.

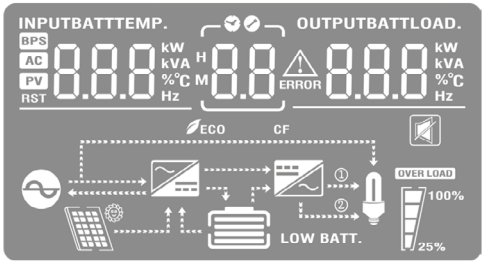


7.2.2 Inverter Priority Mode

Switches to mains power only when the battery voltage is below the set point (04 setting), and switches to battery discharge mode when the mains charging battery voltage is above the set point (05 setting), cycling the battery charge and discharge. This mode maximizes the use of DC power and is used in areas with stable power grids. The switchover does not affect PV charging.



8. LCD DISPLAY ICONS

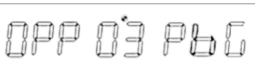
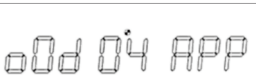
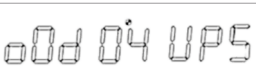


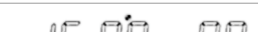
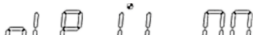
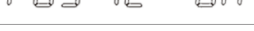
Icon	Description
AC Input Information	
	AC input icon.
	Indicate AC input power,A C input voltage, AC input frequency, AC input current.
PV Input Information	
	PV input icon.
	Indicate PV power, PVv oltage, PV current, etc.
Output Information	
	Inverter icon.
	Indicate output voltage, output current, output frequency, inverter temperature.
Load Information	
	Load icon.
	Indicate power of load, power percentage of load.
OVER LOAD	Indicate overload happened.
Battery Information	
	Indicate battery level by 0-24%, 25-49%, 50-74% and 75-100% in battery mode and charging status in line mode.
	Indicate battery voltage, battery percentage, battery current.
Other Information	
	Indicate alarm code or fault code.
ERROR	Indicate a fault is happening.
	Indicate the alarm is disabled.
ECO	Indicate power saving mode.

8.1 LCD Setting

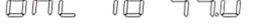
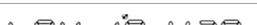
After pressing and holding ENTER button for 2 seconds, the unit will enter setting mode. Press “UP” or “DOWN” button to select setting programs. Then press “ENTER” button to confirm the selection or ESC button to exit.

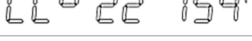
<table>
<tr><th>Program</th><th>Description</th><th colspan="2">Setting Option</th></tr>
<tr><td rowspan="2">01</td><td rowspan="2">Output voltage</td><td colspan="2">  </td></tr>
<tr><td colspan="2">230V (default)
Adjustable/settable value: 208V, 220V, 230V, 240V</td></tr>
<tr><td rowspan="2">02</td><td rowspan="2">Output frequency</td><td colspan="2">  </td></tr>
<tr><td colspan="2">50Hz(default)
Adjustable/settable frequency: 50Hz, 60Hz</td></tr>
<tr><td rowspan="5">03</td><td rowspan="5">Output source priority</td><td>Solar first</td><td>  </td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td>Grid first (default)</td><td>  </td></tr>
<tr><td colspan="2">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.</td></tr>
</table>

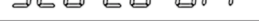
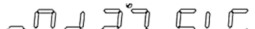
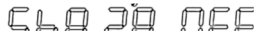
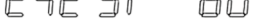
03	Output source priority	PBG priority	
		Solar energy provides power to the loads as first priority. If solar energy is sufficient, battery will be charged with solar energy. If solar energy is not sufficient to power all connected loads, battery will supply power to the loads at the same time. If solar 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.	
04	Output mode	APP: Appliance (default)	
		Applied to household appliances	
		UPS	
		Applied to computer and other devices. Typical switching time is 10ms.	
05	Charger source priority	PNG: PV and Grid (default)	
		OPV: Only PV	
		GRD: Grid first	
		PV: PV first	
		There are four 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 GRD (Grid). Grid charging takes priority. The fourth is PV. PV gives priority to charging.	
06	Grid charging current		
		30A(default) Setting range is [2, 80A]	

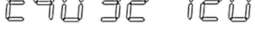
07	Maximum charging current		
		Set total charging current for solar and grid chargers. The default is 60A. Available options: 2/10/20/30/40/50/60/70/80A	
08	Menu Default		
		During setting: Set to ON. If the current page is not on the first page and no operation with 1 minute, the system will return 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 Mains or PV loss alarm. The default setting is ON. If the main input detected lost, the buzzer will sound for 3 seconds. when set to OFF, after the main 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 50W, the system will stop output for a period then resume. If the load is still lower than 50W, the system will do the loop stop then resume. If the load is higher than 100W, the system will resume continuous normal output.	
13	Overload transfer to bypass		
		The default setting is OFF.W hen set to ON, in the case of PV priority output, if there is an overload, the system will immediately transfer to bypass mode (utility power output, also known as bypass mode).	

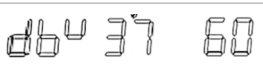
14	Silent mode setting		
		Enable/disable buzzer sound. The default setting is OFF.W hen set to ON, in any situation such as alarms or faults, the buzzer will not sound. This setting can be applied to all modes .	
15	Battery return to mains voltage point		
		When the battery is set to the CUS (Customer Setting Type) mode. The adjustable range is [44V, 52V]. .	
		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 the LIB (Lithium Battery Type) mode. The default is 47.6V, and 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 52V, The voltage range is [48, 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 (Lithium Battery) mode, The default setting is 54.4V. It can be adjusted within a range of [46, 58V].	
17	Battery type	AGM	
		Flooded	
		Lithium (default)	
		User-Defined	

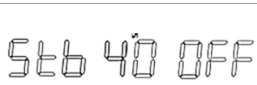
18	Battery low voltage point	
		It is not possible to set the battery definition mode to AGM or FLD mode. The initial default setting is 44V. When the battery type is set to CUS, the adjustable range for the battery voltage is [42, 54V].
		Battery low voltage alarm setting. When the battery type is set to LIB, the default setting is 47.6V. The adjustable range for the voltage is [41.2, 50V].
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 CUS, the default setting is 42V. The adjustable range for the voltage is [40, 48V].
		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].
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. 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]. It is important to ensure that the constant voltage set point voltage is higher than the float charge set point voltage.
21	Floating charge 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/FLD mode is 54V. When the battery type is CUS, It can be set within the range of [48, 60V] for the floating charging voltage set point. If the battery type is LIB, the default setting for the floating charging point is 55.2V. The setting range is between 50V and 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 output mode isA PP, Grid low voltage point can be set within a range of 90V to 154V. The default setting is 154V.
		If output mode is UPS, Grid low voltage point can be set within a range of 170Vt o 200V. The default setting is 185V.
23	Grid high voltage point setting	
		If output mode isA PP, Grid high voltage point can be set within a range of 264Vt o 280V. The default setting is 264V.
		If output mode is UPS, Grid high voltage point is set as 264V.
24	Low power discharge time setting	
		When in battery mode and operating under a low load, unrestricted discharge for an extended period can deplete the battery, affecting its lifespan. When the inverter reaches the set low power discharge time, the low voltage shutdown point will be raised to 44V. The default low power discharge time is 8 (8 hours), adjustable range [1, 8]. In inverter mode,the low power discharge time setting,the default is 8(8 hours),the setting range is [1, 8].
		In battery mode, after the continuous discharge time exceeds 8 hours and the battery shutdown point has not been reached, the battery voltage shutdown point will be modified to 44V, and the system will alarm for 1 minute when the battery continues to discharge to 44V. Then shut down again.When the battery voltage exceeds 52.8V exceeds 30s, the battery discharge time will be reset..
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.
27	Parallel mode setting	
		Not Applicable for this model.
28	Battery Disconnection Alarm	
		Enable/Disable battery disconnection alarm. Default setting is OFF.When set to OFF, there will be no battery disconnection, low battery voltage, or battery under voltage alarms when the battery is disconnected.
29	Battery Equalization Mode	
		Enable/Disable Battery equalization. Default setting is OFF. If it is set to ON, the controller will start to enter the equalization phase when the set equalization interval (battery equalization period) is reached during the float charging stage, or the equalization is activated immediately.
30	Equalization Voltage Point Setting	
		The default setting is 58.4, with a configurable range of [48, 60V].
31	Equalization Charging Time Setting	
		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 default setting is 60 minutes, with a configurable range of [5, 900], and an increment of 5 minutes for each setting.

32	Equalization DelayT ime Setting	 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.
33	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.
34	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.
35	Grid-tie inverter function	 Set whether the inverter should feed power to the grid in PV priority grid mode or PBG grid mode. The default setting is OFF, and the function is not enabled. When set to ON, the inverter tracks the maximum power point, and the excess energy is fed into the mains.After the function is turned on, if a communication ab normality occurs, an alarm 56 is generated, and the inverter no longer determines the operation logic according to the BMS information.

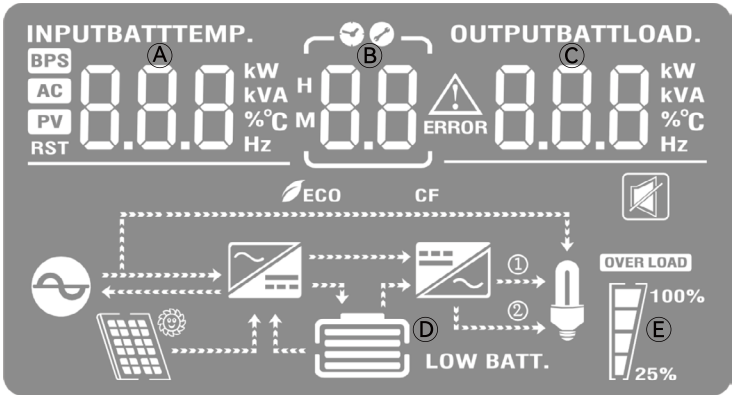
36	Battery dual output low voltage shutdown point	 When enabled, the secondary output of the inverter is enabled by default. In battery mode, when the battery voltage drops below the set point, the secondary output is turned off. When the battery voltage rises above the set value plus 1V per additional 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.
37	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 ON, the function is not enabled. The configurable range is [5,890] in minutes. When set to FUL, the secondary output has unlimited output time.
38	BMS Communication Function	 Enable/Disable lithium battery communicates with inverter. Default setting is ON, if a communication abnormality occurs, alarm 56 is generated and the inverter no longer operates based on the BMS information.

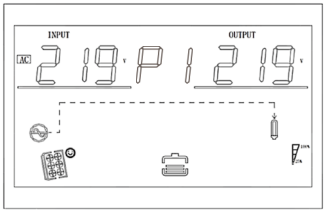
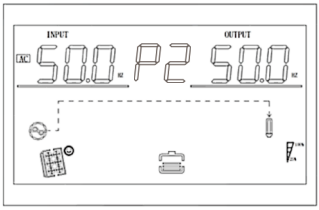
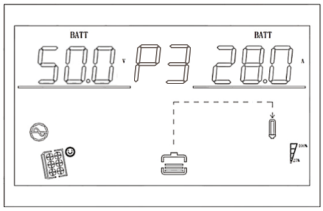
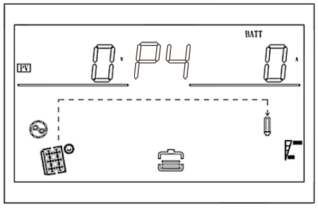
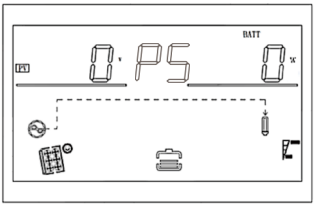
39	Low SOC Shutdown	 Set the inverter to shut down when the State of Charge (SOC) of the battery is low. Default setting is 20, with a configurable range of [5, 50]. When the lithium battery SOC reaches the set value in battery mode, the inverter shuts down and generates alarm 68. The alarm 68 is cleared 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.
40	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.

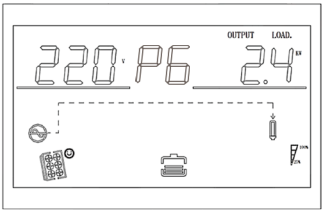
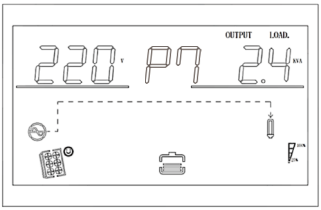
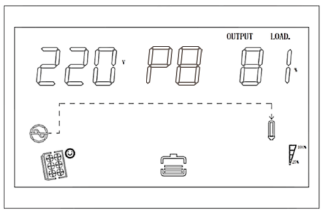
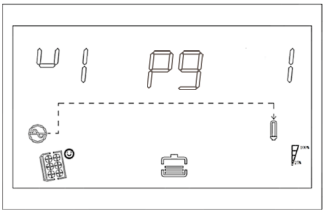
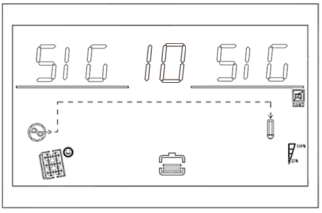
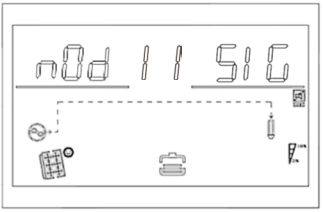
41	Low SOC to Grid	StG 41 OFF Set the SOC value for the inverter to switch to grid mode. The default setting is 50, with a configurable range of [10, 90]. In PBG priority mode, when the lithium battery SOC reaches the set value in battery mode, the inverter switches to grid mode. Once enabled, the inverter 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 backt o 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.

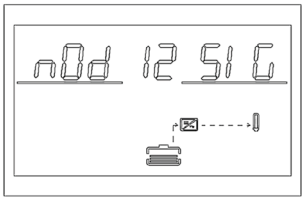
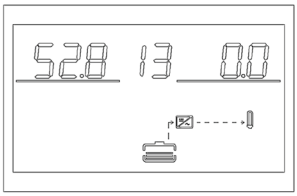
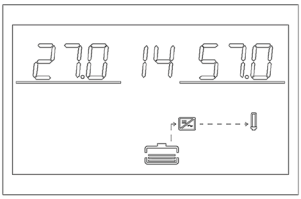
8.2 Display Information

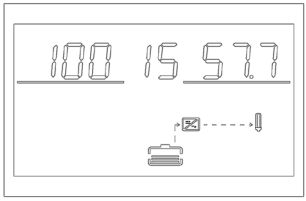
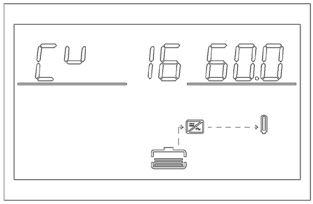
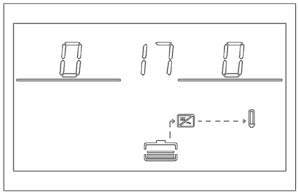
The LCD display information will be switched in turns by pressing “UP” or “DOWN” key.
The selectable information is switched as below order: voltage, frequency, current, power, firmware version.



InformationL	CD display
Ⓐ AC Input voltage Ⓑ Alarm or Fault code (Default Display Screen) Ⓒ Output voltage Ⓓ Battery capacity Ⓔ Load percentage	
Ⓐ AC Input frequency Ⓑ Alarm or Fault code Ⓒ Output frequency Ⓓ Battery capacity Ⓔ Load percentage	
Ⓐ Battery voltage Ⓑ Alarm or Fault code Ⓒ Output current Ⓓ Battery capacity Ⓔ Load percentage	
Ⓐ PV voltage Ⓑ Alarm or Fault code Ⓒ PV charging current Ⓓ Battery capacity Ⓔ Load percentage	
Ⓐ PV voltage Ⓑ Alarm or Fault code Ⓒ PV power Ⓓ Battery capacity Ⓔ Load percentage	

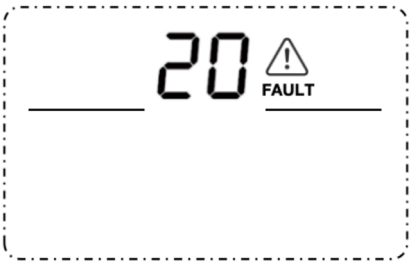
Ⓐ Output voltage Ⓑ Alarm or Fault code Ⓒ active power output Ⓓ Battery capacity Ⓔ Load percentage	
Ⓐ Output voltage Ⓑ Alarm or Fault code Ⓒ complex power output Ⓓ Battery capacity Ⓔ Load percentage	
Ⓐ Output voltage Ⓑ Alarm or Fault code Ⓒ load percentage Ⓓ Battery capacity Ⓔ Load percentage	
Display software version	
Display photovoltaic power generation	
parallel operation status display photovoltaic power generation	

After enabling BMS, the following pages are available	
Network status of lithium battery When the upper right display shows SIG constant, the battery pack is operating as a single group;W hen it shows PAR constant, the battery pack is operating in multiple groups in series and parallel; When it flashes PAR, the battery pack is establishing a state of multiple groups in series and parallel	
Lithium battery voltage and current information; The upper left displays BMS battery voltage information; The upper right displays BMS battery current information.W hen BMS communication fails, both the upper left and upper right displays will flash ERR	
Lithium battery temperature and SOC; The upper left displays BMS temperature information; The upper right displays BMS SOC information. When BMS communication fails, both the upper left and upper right displays will flash ERR	

Lithium battery capacity; The upper left displays rated capacity; The upper right displays current capacity.W hen BMS communication fails, both the upper left and upper right displays will flash ERR	
Lithium battery constant voltage point; The upper left displays the fixed letter CV; The upper right displays the BMS constant voltage charging point.W hen BMS communication fails, the upper right display will flash ERR	
Lithium battery fault alarm information; The upper left displays BMS alarm information; The upper right displays BMS fault information. When BMS communication fails, both the upper left and upper right displays will flash ERR	

9. 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	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

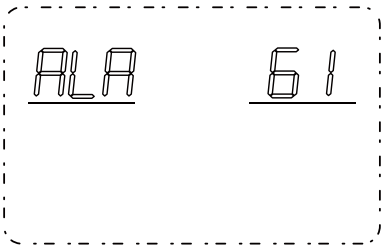
Fault code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault / Alarm
3B	us voltage low	Turn fault mode	Bus voltage is below the under voltage protection point.	Cannot restore.	Fault
4	Battery over current	Turn fault mode	TZ interrupt triggered more than 2 times within 2ms.	Cannot restore.	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
7	Bus soft start fault	Turn fault mode	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

Fault code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault / Alarm
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 no 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 lower than set value(negative power, such as -1200W).	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
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

Fault code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault/ Alarm
16	No boot loader	Turn fault mode	No boot loader.	Cannot restore. Try to send command TIDA1911000000000000.	Fault
17	Program updating	Turn fault mode	Inverter receive updating task.	Restore after updating.	Fault
26	BMS fault	Turn fault mode	Error code in BMS message.	Turn off BMS communication function or BMS fault recovery.	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

10. ALARM REFERENCE CODE

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



Alarm code sheet

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.	Alarm
51	Battery low voltage shutdown	Alarm, battery low voltage shutdown or cannot power on.	Battery voltage is below set point.	Restore after battery voltage recover.	Alarm
52	Battery low voltage	Alarm	Battery voltage is below set point.	Restore after battery voltage recover.	Alarm
53	Charger short circuit	Warning, battery does not charge.	The battery voltage is less than 5V and the charging current is greater than 4A.	Cannot restore.	Alarm
54	Low power discharge	Alarm	The battery voltage is greater than 52.8V and the discharge time exceeds the set low-power discharge time.	Restore after battery voltage recover.	Alarm
55	Battery over charge	Alarm, battery does not charge.	Battery voltage is higher than the set value.	Can restore.	Alarm
56	BMS disconnect	Alarm, lock standby mode.	No correct BMS communication response within 10 seconds.	Restore after communication recover.	Alarm

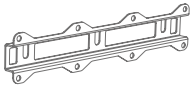
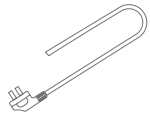
Alarm code	Meaning	Relevant action	Trigger conditions	Resume conditions	Fault / Alarm
57	Over temperature	Alarm, battery does not charge.	The temperature of PFC or INV is above the set value.	Restore after temperature is under set value.	Alarm
58	Fan error	Alarm, if one fan fails and the other fan is running at full speed.	Fan speed is less than the set value.	Restore after fan recover.	Alarm
59	EEPROM errorA	larm	Numerical calibration error.	Restore after calibration right.	Alarm
60	Overload	Alarm, battery does not charge.	When not in mains mode or the PV is normal and the output priority is not mains priority, the load exceeds 102% and the duration is 200-220 ms.	Restore after load back to normal	Alarm
61	Abnormal generator waveform	Alarm, continuously operating in battery mode.	Generator waveform detection result is abnormal.	Can restore.	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.	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%.	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% (standby 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%.	Alarm

11. INSTALLATION INSTRUCTIONS

11.1 Unpacking and inspection

Inspect the unit before installation. Make sure there is no damage in the package. You should receive the following items in the package:

①. All-In-One Home Energy Storage	②. Mounting Bracket x1	③. Short Screws x3	④. Expansion Screws x8
			
⑤. Power Strip x1	⑥. MC4 x1	⑦. power cable x1	⑧. User Manual x1
			

11.2 Preparatory work (installation in the off state, it is recommended that the installation of equipment to find a professional electrician installation)

Wall-mounted Before selecting a mounting location, consider the following points:

①. Do not install the all-in-one on flammable building materials.

②. Do not install the product in a harsh environment.

③. Mounted on a sturdy surface.

④. Install the All-in-One at eye level so that the LCD display can be read at all times.

⑤. The ambient temperature should be between 0° C and 55° C to ensure optimal operation.

⑥. Vertical mounting on the wall is recommended.

⑦. Be sure to retain the other objects and surfaces shown at right to allow for adequate heat dissipation and enough room to remove the wires.

⑧. Before connecting all wiring, remove the bottom cover by unscrewing the two screws as shown below.

WARNING !

Requires the product to be installed with the power off and disconnected.

11.3 Procedure for use

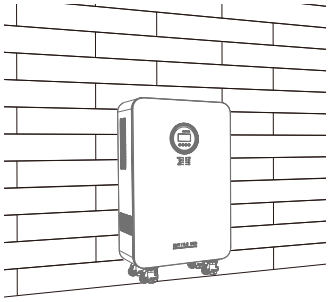
① . Check that all wires are wired as specified.

② . Before using the product, it must be used in accordance with the requirements of the parameters within the manual.

③ . Note that the air switch is in the "ON" state, then press the key to turn on the product, the product can be used normally.

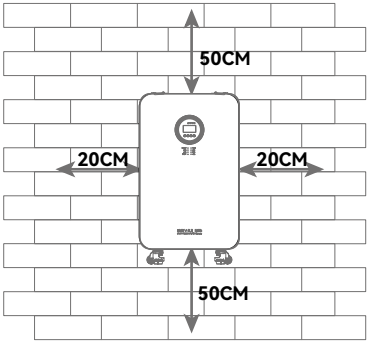
Floor-Standing

⚠ It is recommended that the product be placed close to a corner.



Wall-Mounted

⚠ suitable for installation on concrete or other non-flammable surfaces only.



WARNING !

All wiring must be performed by a qualified personnel.

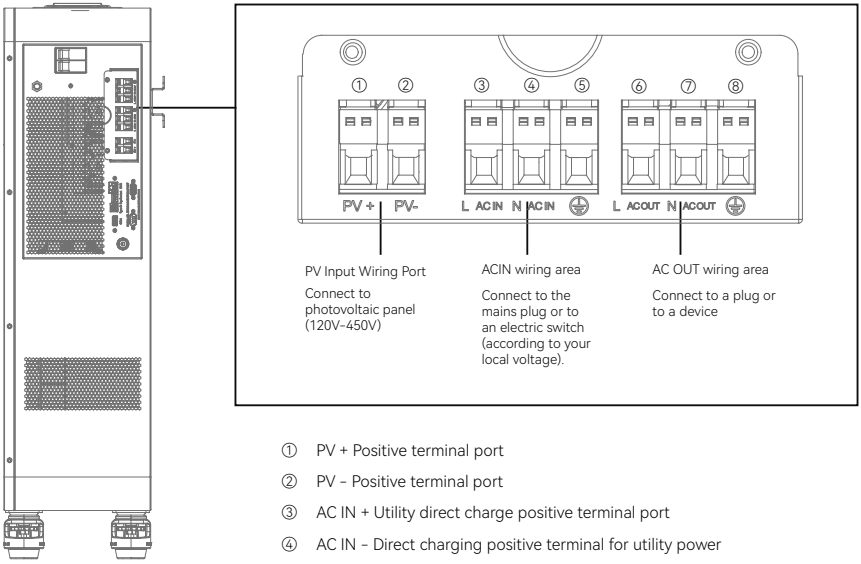
12. OPERATING INSTRUCTIONS

1. Before powering on, check whether the air switch is in the disconnected state, if not, please disconnect the air switch.
2. Press the metal switch, the boot process needs about 10s self-test.
3. Check the display parameters to see if they are normal (see the manual).
4. Check the power display light, such as the display reported "7" or "8" error, indicating that the power is too low, please replenish power in time.
5. Charging instructions: remove the side of the small pull plate screws, pull open the pull plate, access to the charging line (according to the silkscreen), open the charge.
   Discharge instructions: access the discharge line (according to the silkscreen), make sure the access is secure, open the air switch, open the discharge.

WARNING !

The product wiring must be in a state of power failure, it is strictly prohibited to work with electricity.

13. WIRING HOLE DESCRIPTION



① PV + Positive terminal port
② PV - Positive terminal port
③ AC IN + Utility direct charge positive terminal port
④ AC IN - Direct charging positive terminal for utility power
⑤ AC IN Utility direct charging ground wire connector
⑥ AC OUT + Inverter output positive terminal port
⑦ AC OUT - Inverter Output Negative Terminal Port
⑧ AC OUT Inverter output ground wire ground port

15. WARRANTY DESCRIPTION

Please read the instructions carefully and keep them in a safe place.

1. This product will be repaired if it malfunctions during the warranty period for normal use in accordance with the operating instructions. The parts replaced during the warranty period
   are the property of our company.
2. For replacement or warranty, please send this warranty card together with the product.
3. No free repairs will be made during the warranty period if any of the following conditions apply.
   ①. Damage caused by failure to comply with the requirements of the instruction manual for use, maintenance and repair, or the use of non-original parts.
   ②. Failure or damage caused by improper storage and custody (product battery failure due to not recharging the product for a long period of time);
   ③. Failure or damage caused by the use of power supply equipment and load rated equipment not within the specified voltage range.
   ④. Failure or damage caused by private repair, dismantling or modification.
   ⑤. Damage to the surface coating and exterior is not covered by the warranty.
   ⑥. Product outer packaging and product accessories are not covered by the warranty.
   ⑦. Torn, altered or unrecognizable product labels, seals and serial numbers (SN).
8. Failure or damage due to force majeure (force majeure refers to an objective event that cannot be foreseen, avoided or overcome.
   This includes natural disasters such as floods, fires, explosions, lightning, earthquakes and storms, as well as social events such as wars and disturbances).
9. This manual is for use only in (this sales area), the final interpretation right belongs to the company.
10. Please keep this manual in a safe place as it will not be distributed separately to users.
11. If the name of the distributor is not written or stamped, ask the distributor from whom you purchased the product for proof of the date of purchase and the name of the distributor, and issue a receipt to the distributor. If you do not have such proof, please contact your dealer or the company from which you purchased the product. If you purchased the product from our online store, please be sure to provide proof of the date of purchase, such as an invoice, order number, or a screen shot of your order history.

16. REIMBURSABLE SERVICE WARRANTY

Because the product does not meet the warranty conditions need to be charged, the company will be based on parts and labor costs to calculate the appropriate repair costs, and put forward a repair quote to you, after obtaining your consent and payment of the cost to provide repair services for your product.