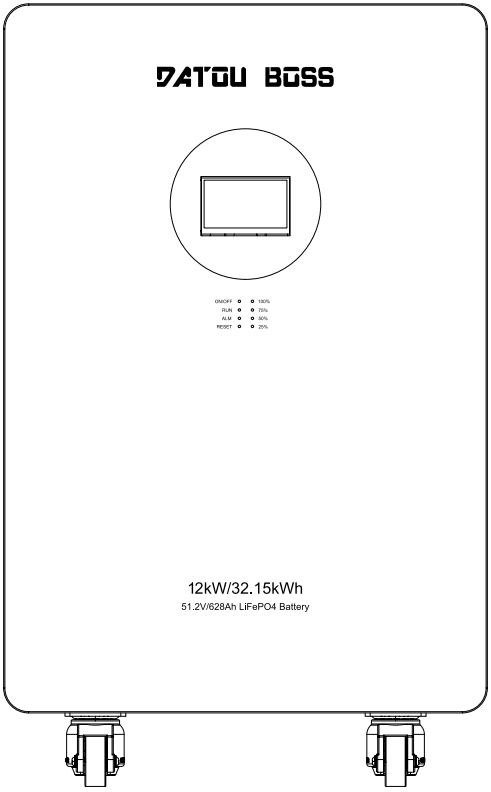
USER MANUAL

All-In-One Home Energy Storage

JC-1232



1. SECURITY:NOTESANDWARNINGS

READ, UNDERSTAND AND FOLLOW ALL INSTRUCTIONS: Before using or installing this product, fully read and understand all applicable instructions and documentation. Save all manuals and documentation for future reference.

1. Wear safety equipment and use insulated tools.
2. Installation should be carried out by a professional.
3. Use the appropriate size.
4. Ensure that the installation follows applicable local and national electrical codes.
5. Ensure that the system is properly grounded.
6. Ensure that the battery is installed in a location suitable for the electronic device.
7. Please keep the battery within the safe temperature range for stable operation.
8. Clean the battery with a suitable cleaner (e.g. sandpaper, dry cloth) and do not use any spray cleaners, liquids, aerosols or any solvents to clean the spray paint.
9. Make sure all fasteners are properly tightened.
10. Do not burn, crush or puncture the battery.
11. Do not place the battery in a hazardous/flammable environment where it could come into contact with corrosive chemicals or vapours.
12. Do not store or install this product in radiators, collectors, cookers or enclosures that may remain overheated.
13. Do not immerse the product in liquid.
14. Risk of fire, explosion and burns. If electrical odour or overheating occurs, safely disconnect circuit breakers and call the fire department.
15. Keep away from damaged batteries and any liquid (electrolyte) or gas (flammable) leaking from batteries. If inadvertently inhaled, evacuate the contaminated area and seek medical assistance.
16. If battery leakage/fluid comes into contact with eyes or skin, flush the affected area with running water for 15 minutes and seek medical attention.
17. In the event of a fire, do not use water! Use only dry powder fire extinguishers. If possible, move the battery pack to a safe place before it catches fire.

2. PREPARATION FOR SHIPMENT, RECEIPT AND INSTALLATION

2.1 Shipment and receipt

All-in-one batteries are made of lithium iron phosphate cells (LifePO4) and are classified as Class 9 Dangerous Goods, so please be aware of the following matters regarding shipment and receipt:

- SHIPPING: All-in-one batteries should be packaged appropriately for transport in accordance with the handling and labelling rules for lithium batteries UN3480.
- RECEIVING: When receiving the all-in-one battery, please inspect it. If you find any damage to the packaging or the inside of the battery pack, take photos and videos and contact your dealer immediately.

Please keep the original box and packaging materials intact in case the all-in-one battery needs to be repacked or warranted in the future.

2.2 Preparation for installation

Tools required for installation:

- Suitable size Phillips screwdriver / torque spanner / riveting pliers.

Connecting the battery using cables/lugs:

- Correct cable: a cable that meets the safe current for battery pack use.
- Correct lugs: conform to battery pack installation dimensions and safe current lugs.

3. INSTALLATION INSTRUCTIONS

3.1 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:

- All-In-One Home Energy Storage
- User Manual x1

3.2 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. Use safety devices and insulated tools in accordance with applicable local and national electrical codes by a qualified person who has fully read, understands, and strictly adheres to all instructions in this manual.
2. In applicable locations and environments:
   ①. Do not install the product in harsh environments; ambient temperatures should be between 0° C and 55° C to ensure optimum operation.
   ②. No hazardous/flammable or corrosive chemicals or vapours.
   ③. There are no nearby heat sources such as radiators, collectors or furnaces to transfer heat to the battery or retain excess heat in the enclosure.
   ④. No children or pets are present or likely to be present.
   ⑤. Do not install the All-in-One on flammable building materials, vertical mounting on a solid wall is recommended.
   ⑥. Ensure that other objects and surfaces shown at right are retained so that there is enough room for heat dissipation and enough room to remove wires.
   ⑦. Mount the MFP at eye level so that the LCD display can be read at all times.
   ⑧. Its properly grounded, twisted, tightened and wired.

WARNING !

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

4. SPECIFICATION

No.	Project	Description
01	Battery Specifications	51.2V 628Ah (16S2P - 314AH)
02	Total Energy	32.14KWH
03	Rated Capacity	628Ah
04	Battery Internal Resistance	≤ 13.9mohm
05	Standard Discharge Capacity	≥ 628Ah
06	Charge Cut-off Voltage	56-58.4V
07	Maximum Input Current	250A
08	Maximum Output Current	250A
09	Charging Method	Constant Current Constant Voltage Charging
10	Overcharge Protection Recovery	54.08V
11	Over-Discharge Protection	43.2V
12	Over-Discharge Protection Recovery	46.4V
13	Charge High-Temperature Protection	55℃
14	Charge High-Temperature Protection Recovery	50℃
15	Charge Low-Temperature Protection	0℃
16	Charge Low-Temperature Protection Recovery	5℃
17	Discharge High-Temperature Protection	55℃
18	Discharge High-Temperature Protection Recovery	50℃
19	Low-Temperature Discharge Protection	-20° C
20	Low-Temperature Discharge Protection Recovery	-15° C
21	Overcurrent Protection During Charging	260A
22	Overcurrent Protection During Discharge	260A
23	Short-Circuit Protection	Recovery methods include “Remove Load” and “Charge Release”
24	Storage and Transportation Capacity	40% to 60%

25	Balancing Method	Passive balancing
26	Self-Discharge During Power Outage	≤ 300μA
27	Battery Cycle Life	25° C 0.5C ≥ 8000 cycles, 70% EOL
28	Protection Rating	IP20
29	Communication Protocol	CAN, RS485
30	Inverter Type	Off-grid
31	Rated Input Voltage	220/230/240Vac; L+N+PE
32	Input Voltage Range	170~280Vac
33	Frequency Range	50/60Hz
34	Inverter Output Power	12000W
35	Peak Power	24KVA
36	Output Voltage	220/230/240Vac
37	Output Frequency	50/60Hz±0.1%
38	Conversion Efficiency	94%
39	Switching Time	10ms (UPS mode), 20ms (generator mode)
40	Waveform	Sine wave
41	Standby Power Consumption	≤ 50W
42	Maximum PV Open-Circuit Voltage	500Vdc
43	Number of MPPT Trackers	2 circuits
44	Maximum MPPT Charging Power	Single PV input: 27A/9000W Dual PV inputs: 22.5A*2/15000W
45	MPPT Operating Voltage Range	60 ~ 450Vdc
46	MPPT Tracking Efficiency	99.9%
47	Maximum PV Input Current	160A
48	PV Charging Efficiency	94%
49	Interface	LCD display
50	Communication	RS485/CAN
51	Maximum Operating Altitude	4000m (Derating above 1000m)
52	Relative Humidity	5%-95% (No condensation)

5. BASIC OPERATIONS

To turn on the power, please press the battery switch first, then press the inverter switch.

BATTERY ON/OFF: Press the "Battery Switch Button", the work indicator and power indicator light up.

ON/OFF
BATTERY

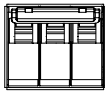
Inverter ON/OFF: Press the "Inverter Switch Button", the inverter display lights up.

ON/OFF
INVERTER

1/2 PV ON/OFF: Turn on the PV switch and make sure the power is on and the PV cable is connected. Turn on the PV switch and the product starts PV charging.Turning the PV switch off stops the PV input.

PV ON/OFF

AC Input On/Off: Turn the AC Input switch on and make sure the power is turned on. The product starts AC charging. Turning the AC switch off stops the AC input.



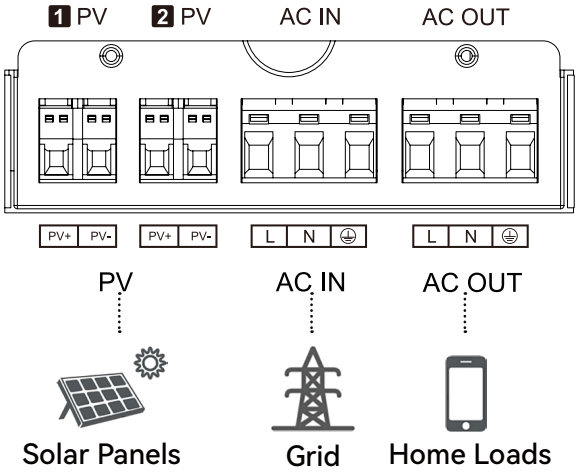
AC IN ON/OFF

AC Output On/Off: Turn the AC Output switch on, the AC Output port is connected to an external load device and the product starts charging the external load device. Turning off the AC switch stops the AC output.

AC OUT ON/OFF

6. WIRING HOLE DESCRIPTION

6.1 PV Interface



Port Label		Terminal Name	Description
PV	PV +	Positive Terminal	Connect to the positive (+) output wire from the solar panel(s).
	PV -	Negative Terminal	Connect to the negative (-) output wire from the solar panel(s).
AC IN	L	Phase R (Line 1)	Connect to the Phase R (L1) live wire of the three-phase AC supply.
	N	Neutral	Connect to the neutral wire of the AC supply.
	⏚	Protective Earth (Ground)	Must be securely connected to a proper earth ground for safety.
AC OUT	L	Phase R (Line 1)	Output Phase R (L1) live wire.
	N	Neutral	Output neutral wire.
	⏚	Protective Earth (Ground)	Output protective earth wire. Must be connected to the ground terminal of the load equipment.

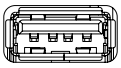
Critical Safety Instructions:

1. Professional Installation Required: Connection of three-phase AC power must be performed by a qualified electrician to ensure correct phase sequence and secure terminations.
2. Grounding is Mandatory: The PE (Protective Earth) terminals for both input and output MUST be properly grounded. This is essential to prevent electric shock and ensure operational safety.
3. Power Off Before Wiring: Ensure that ALL AC input power sources are completely disconnected (OFF) before making or modifying any connections.

6.2 Smart Interface

The COM interface connects to the smart communication stick, enabling data exchange between the battery system and the cloud platform.

Insert the smart communication stick vertically into the COM port until it is fully inserted and securely seated.

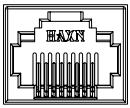


COM

6.3 BMS Interface

The BMS interface connects to the Battery Management System (BMS) to enable battery status monitoring, control, and communication.

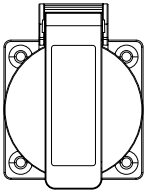
Align the BMS low-voltage wiring harness connector with the port and insert it vertically until you hear the latch engage.



BMS

6.4 AC Output Port

The AC output port provides alternating current power for external loads. Connect AC equipment cables to this port.



AC OUT

7. PRODUCT OVERVIEW

ON/OFF • Switching Indicator
RUN • Operation Indicator
ALM • Alarm Indicator

Table 1 LED display description

State of system	Event	ON/ OFF	RUN	ALARM	Battery Indicator LED				Instruction
		●	●	●	●	●	●	●	
Power Off	Dormant	Off	Off	Off	Off	Off	Off	Off	All LEDs turn off
Static State	Normal	Always On	Flash1	Off	Based on battery indicator				Standby Status
	Alarm	On	Flash1	Flash3					Module Low Voltage
Charging	Normal	On	On	Off	Based on power indication (Power indicator LED flashes up to 2)				Maximum charge LED flashing (flash 2), overcharge alarm ALM not flashing
	Alarm	On	On	Flash3					The over-voltage alarm does not flash
	Overcharge protection	On	On	Off	On	On	On	On	If there is no utility power, the indicator is in standby mode.
	Temperature, overcurrent, failure protection	On	Off	On	Off	Off	Off	Off	Stop charging
Discharging	normal	On	Flash3	Off	Based on battery indicator				-
	Alarm	On	Flash3	Flash3					
	Undervoltage protection	On	Off	Off	Off	Off	Off	Off	Stop discharge
	Temperature, overcurrent, short-circuit, reverse connection, failure protection	On	Off	Off	Off	Off	Off	Off	
Lose Efficacy		On	Off	On	Off	Off	Off	Off	Stop charging/ discharging

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

Table 2 SOC display description

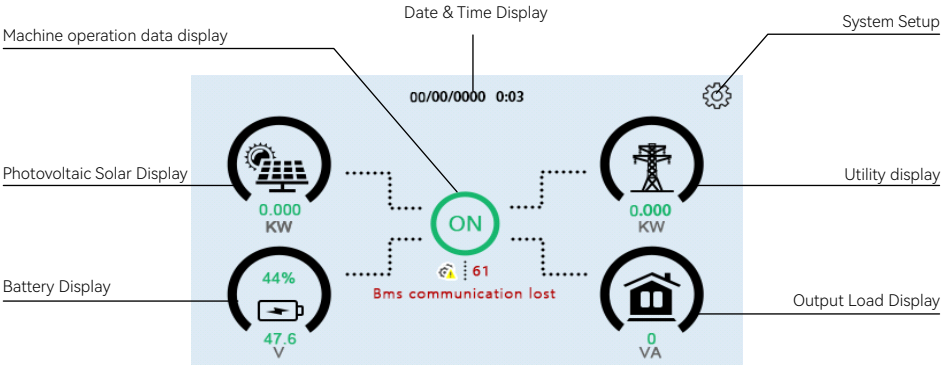
State		Charging				Discharge			
LED		LED4	LED3	LED2	LED1	LED4	LED3	LED2	LED1
		●	●	●	●	●	●	●	●
SOC(%)	0~25%	Off	Off	Off	Flash2	Off	Off	Off	On
	25~50%	Off	Off	Flash2	On	Off	Off	On	On
	50~75%	Off	Flash2	On	On	Off	On	On	On
	75~100%	Flash2	On	On	On	On	On	On	On
RUN LED ●		On				Flash3			

Table 3 LED flash description

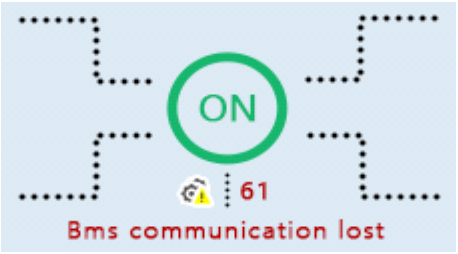
Flash Mode	OFF	ON
Flash1	0.25S	3.75S
Flash2	0.5S	0.5S
Flash3	0.5S	1.5S

8. LED DISPLAY DESCRIPTION

8.1 Product Overview



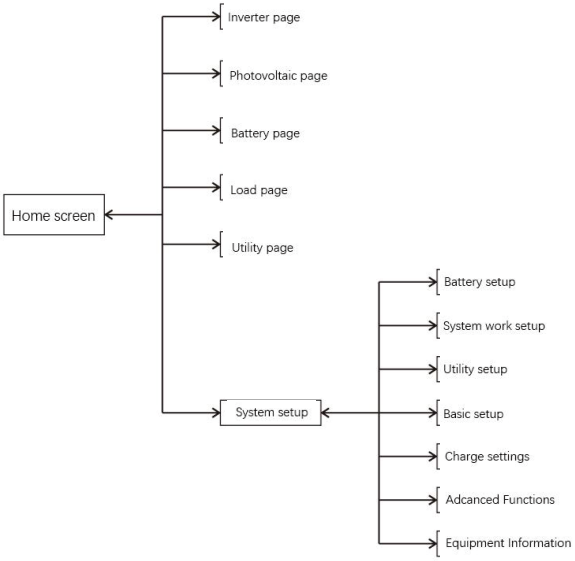
1. The absence of an icon in the centre of the main screen indicates that the system is in normal operation. If the centre of the main screen displays a grey icon and characters, this means that the inverter has issued an alarm, and the alarm message will be displayed as a character under the no icon (details of the error message can be found in the annunciator alarm menu). If a red icon and character are displayed in the centre of the main screen, this means that the inverter is faulty and the fault message will be displayed as a character under this icon (details of the error message can be found in the manual alarm menu).



3. At the top of the screen is the time .
4. System Setup icon, by pressing this setup button, you can access the system setup screen, which includes battery settings, system operating mode, grid settings, basic settings, advanced features, and device information.
5. The main screen displays information including photovoltaic, utility, load and battery. It also shows the direction of energy flow in arrows. When power is approaching the limit, the colour on the panel changes from green to red, allowing system information to be displayed vividly on the main screen.
6. The PV power and load power are always positive.
7. The utility power supply is negatively connected to the grid and positively acquired.
8. Indicator Light Information Sheet.

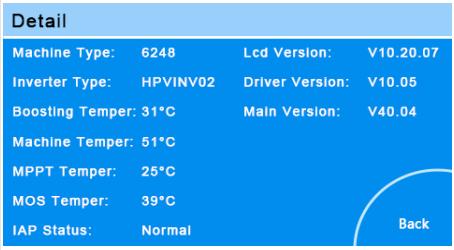
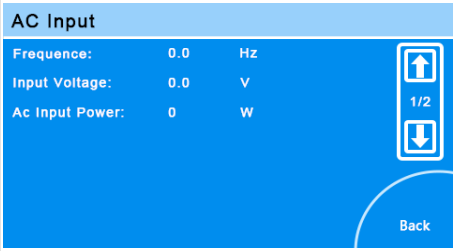
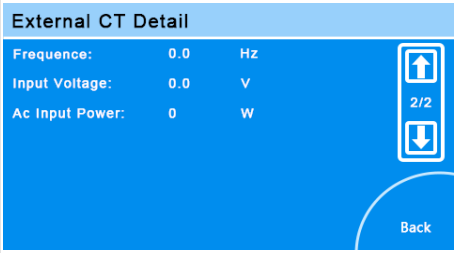
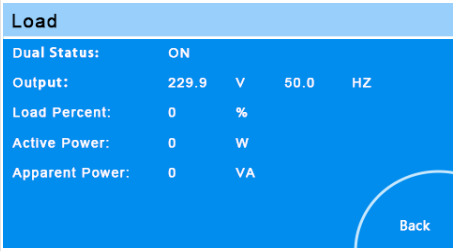
8.2 Touch screen display flow chart

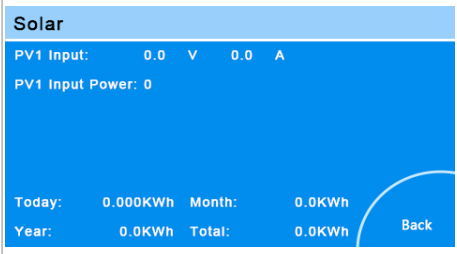
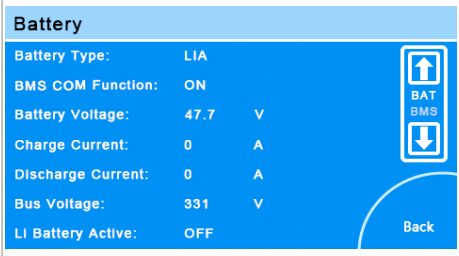
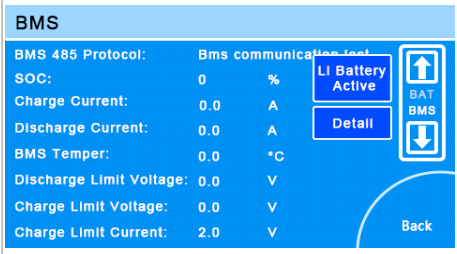
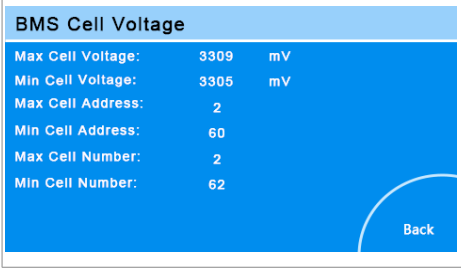
1. At the top of the screen is the time .
2. System Setup icon, by pressing this setup button, you can access the system setup screen, which includes battery settings, system operating mode, grid settings, basic settings, advanced features, and device information.
3. The main screen displays information including photovoltaic, utility, load and battery. It also shows the direction of energy flow in arrows. When power is approaching the limit, the colour on the panel changes from green to red, allowing system information to be displayed vividly on the main screen.
4. The PV power and load power are always positive.
5. The utility power supply is negatively connected to the grid and positively acquired.
6. Indicator Light Information Sheet.



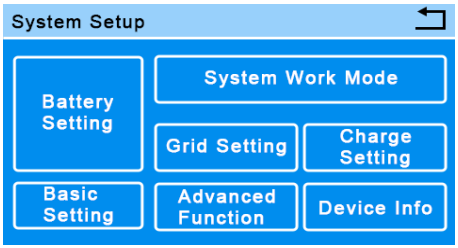
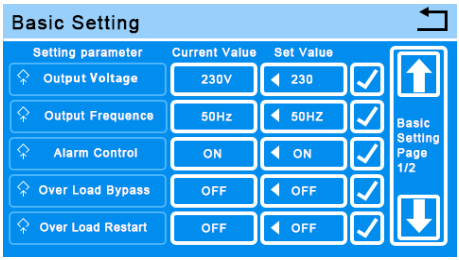
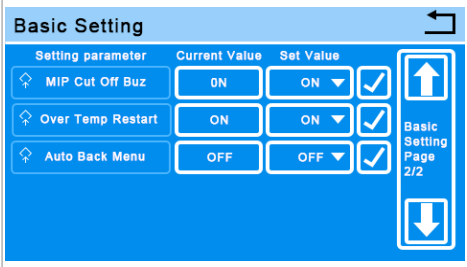
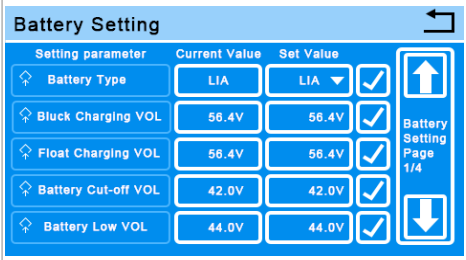
8.3 Touch screen operating instructions

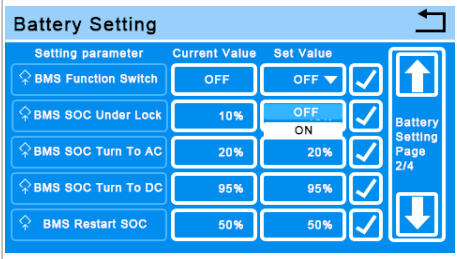
8.3.1 Touch screen main interface page contentinstructions

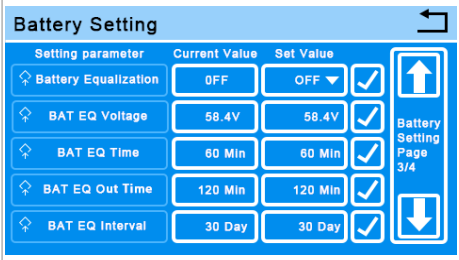
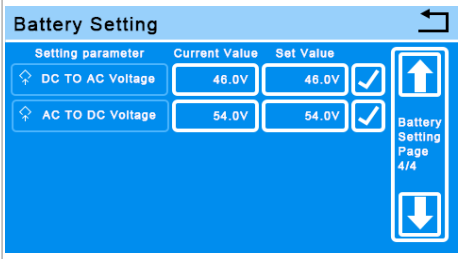
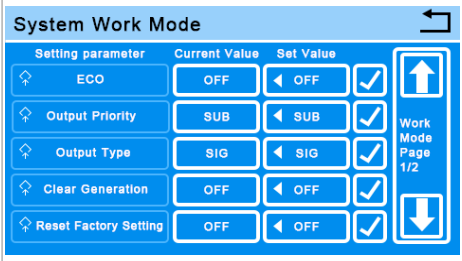
Inverter Page	Inverter Data Details Page
	This page shows in detail the machine model, machine type, boost tube temperature, internal temperature, MPPT temperature, inverter temperature, whether the underlying program is normal or not, the version number of the colour screen, the version number of the centralised control board, and the version number of the machine control board.
AC Input Page	AC Input Data Details Page
	This page displays detailed information on frequency, input voltage, and AC input power.
External CT Detail Page	External CT Detail Data Details Page
	This page displays detailed information on frequency, input voltage, and AC input power.
Load Page	Load Page Data Details Page
	This page displays detailed information on Dual Status, Output, Load Percent, Active Power, Apparent Power.

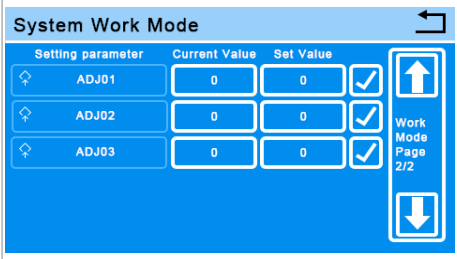
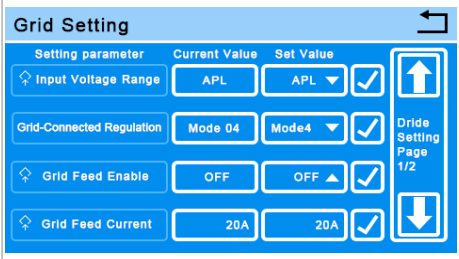
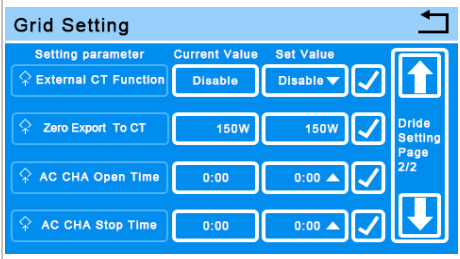
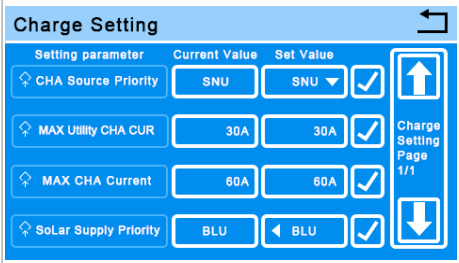
Photovoltaic Page	Photovoltaic Data Detail Page
	This page shows the input voltage, current, and power of the PV solar panel in detail. It also records today's PV power, this month's PV power, this year's PV power, and total PV power.
Battery Page	Battery Detail Page
	This page shows in detail the battery type, BMS current communication status, battery voltage, BAT charge current, BAT discharge current and BUS bus voltage and lithium activation status.
BMS Page	BMS Detail Page
	This page details the BMS current usage protocol, BMS current SOC value, BMS charging current, BMS discharging current, BMS temperature, BMS discharging limit voltage, BMS charging limit voltage, and BMS charging limit current.
BMS Cell Voltage	Detail Page
	This page details the BMS current usage protocol, BMS current SOC value, BMS charging current, BMS discharging current, BMS temperature, BMS discharging limit voltage, BMS charging limit voltage, and BMS charging limit current.

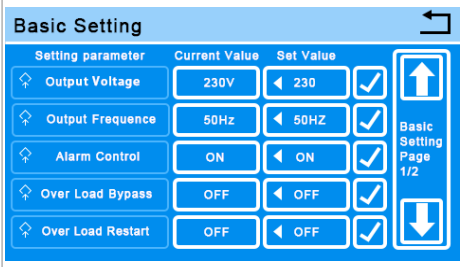
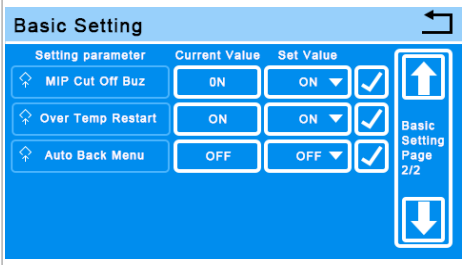
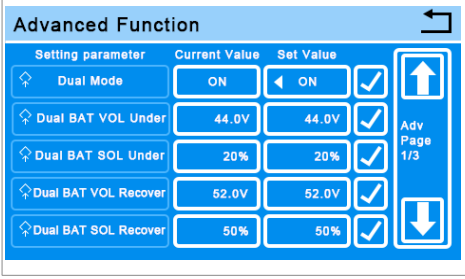
8.3.2 System Setup Menu

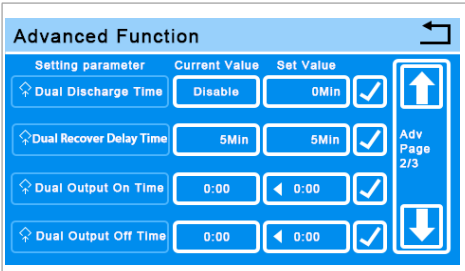
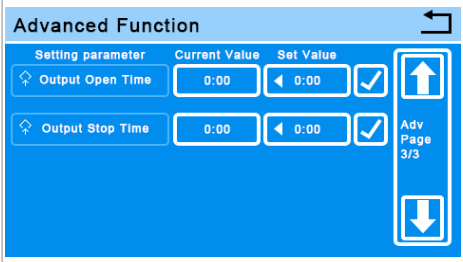
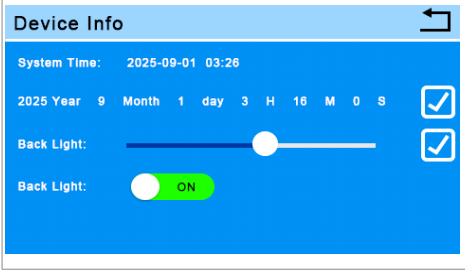
System Setup Menu	System Setup Menu Page
	This is the System Settings page, including Battery Settings, System Operation Mode, Battery Settings, Utility Settings, Charging Settings, Basic Settings, Advanced Functions, and Device Information.
Basic Setup Menu	Basic Setup Menu Page
	This page can be set **Inverter voltage:** 220/230/240V (default 230V) **Inverter frequency:** 50/ HZ (default 50HZ) **Buzzer:** ON/OFF **Bypass switch:** 0N/0FF **Overload restart:** 0N/OFF
	This page allows you to set **Input source prompt function:** 0N/OFF **Over-temperature restart function:** 0N/OFF **Over-temperature restart function:** 0N/OFF
Battery Setting Menu	Battery Setting Menu Page
	This page allows you to set **Battery type:** AGM/FLD/USE/LIA/PYL/TQF / GRO/LIB/LIC **TRONG CHARGE VOLTAGE :** This procedure can be set if Custom is selected for Battery Type. The setting range for 24V system models is 24.0V to 30.0V, 48V system models have a setting range of 48-0V to 60.0V. 0V, 48V system models have a setting range of 48-0V to 60.0V **Float Charging Voltage:** 27V/54V

	Low Power Cutoff Voltage: If battery power is the only available source, the inverter will shut down. If PV energy and battery power are available, the inverter will charge the battery without AC output. This procedure can be set up if Custom is selected for the battery type. The setting range for the 24V system model is 20.0V to 26.0V. The setting range for 24V system models is 20.0V to 26.0V. The setting range is 20.0V to 26.0V for 24V system models, 40.0V to 52.0V for 48V system models None, the low DC cut-off voltage will be fixed to the set value regardless of what percentage of the load is connected. **Battery Low Alarm Voltage:** Range of settings for 24V system models 20.0V-27.0V. Setting range 40.0V-54.0V for 48V system models.
	This page allows you to set **BMS function switch:** whether to enable the BMS communication function or not **BMS Soc Loc kout:** When the SOC value of the BMS falls below the set value, the inverter switches off to protect the battery. **BMS Soc to AC:** When the inverter's mode of operation is set to Battery Priority Mode, the inverter will be forced to enter power charging when the SOC of the BMS falls below the set value. **BMS Soc to DC:** When the inverter's operating mode is set to Battery Priority Mode, the inverter will return to DC operating mode when the SOC of the BMS is higher than the set value. Battery Soc Restart: When the inverter is switched on, the SOC must be higher than the set value to work normally.

<table>
<tr>
<td> 
</td>
<td>This page allows you to set
Battery balancing: If you select "liquid battery" in the battery type or "user-defined", you can set up the program.
Battery equalization voltage: 24V system models default 29.2V, 48V system models default 58-4V
Battery equalization time: Setting range from 5 minutes to 900 minutes.
Battery balancing timeout: Setting ranges from 5 minutes to 900 minutes. Equalization interval: Setting range from 0 to 90 days</td>
</tr>
<tr>
<td> 
</td>
<td>This page allows you to set
DC to AC voltage: 22V-25.5V/44V-51VAC
AC to DC voltage: 24V-29/48V-58V</td>
</tr>
<tr>
<td>System working mode setting menu</td>
<td>System working mode setting menu page</td>
</tr>
<tr>
<td> 
</td>
<td>This page allows you to set
ECO function: When
the load is low in battery mode, the
16 system will temporarily stop.
Output priority: Output source priority options
1. SUB: Solar energy is the first priority for loads. If solar energy is not enough to power all connected loads, utility grid energy will supply power to the loads at the same time. Solar energy provides power as the first priority for load output source priority selection.
2. SBU: If solar energy is not enough to power all connected loads, battery energy will power the loads at the same time. The mains supply power to the load only when the battery voltage drops to a low warning voltage or when solar energy and batteries are insufficient.
Clear Generation</td>
</tr>
</table>

	Output type: SIG/PAL/3P1/3P2/3P3 **Restore factory settings:** To restore default values, check the box and click the "YES" button
	**This page's functionality is currently unavailable.**
Mains grid setting menu	Mains grid setting menu page
	This page allows you to set **Input voltage range:** APL\UPS **Grid-Connected Regulation (This feature is currently unavailable.)** **Grid Feed Enable (This feature is currently unavailable.)** **Grid Feed Current (This feature is currently unavailable.)**
	**External CT Function (This feature is currently unavailable.)** **Zero Export ToCT (This feature is currently unavailable.)** **AC CHA Open Time (This feature is currently unavailable.)** **AC CHA Stop Time(This feature is currently unavailable.)**
Charge setting menu	Charge setting menu page
	This page allows you to set **Charging priority:**Configurechargingpriority 1. CS0:Solar energy will give priority to charging batteries. AC power charges the battery only when solar energy is not available. 2. SNU:Solar and mains power will charge the battery at the same time. 3. 0S0:Solar will be the only source of chargers, AC or not. **Note:** If the inverter/charger is operating in battery mode, only solar energy will charge the

	battery. If there is sufficient solar energy, solar energy will charge the batteries. **Maximum AC curren** **Note:** If the set value in the maximum charging current is less than the set value in the maximum AC current, the inverter will use the charging current in the maximum charging current to charge the AC charger. **Maximum charging current:** Configure total charging current for solar and AC chargers **SoLar Supply Priority (This feature is currently unavailable.)**
Basic Setup Menu	Basic Setup Menu Page
	This page can be set **Output voltage:** 220/230/240V (default 230V) **Output frequency:** 50/ HZ (default 50HZ) **Alarm Control:** ON/0FF **Over Load Bypass:** 0N/0FF **Over load Restart:** 0N/OFF
	This page allows you to set **Main Input Disconnection Warning:** 0N/OFF **Over-temperature restart function:** 0N/OFF **Auto Back Menu:** 0N/OFF
Advanced settings menu	Advanced settings menu page
	**This page's functionality is currently unavailable.**

	This page's functionality is currently unavailable.
	This page's functionality is currently unavailable.
Product information setting menu	Product information setting menu page
	**This page can set the system time:** Year/ month/ day/ hour/ minute/ second **Screen brightness:** from dark to bright. **RGB switch:** on/off

9. FAULT CODE

Fault Code 1	01	BIT00: Mains soft start failure
	02	BIT01: Bus overvoltage
	03	BIT02: Bus undervoltage
	04	BIT03: Battery overcurrent
	05	BIT04: Over-temperature
	06	BIT05: Battery overvoltage
	07	BIT06: Battery soft start fault
	08	BIT07: Bus short circuit
	09	BIT08: Inverter soft start fault
	10	BIT09: Inverter overvoltage
	11	BIT10: Inverter undervoltage
	12	BIT11: Inverter short circuit
	13	BIT12: Negative power protection
	14	BIT13: Overload fault
	15	BIT14: Model mismatch with hardware
	16	BIT15: No bootloader
Fault Code 2	17	BIT00: Program Burning in Progress
	18	BIT01: PV Reverse Connection
	19	BIT02: Parallel Sequence Number Anomaly
	20	BIT03: Parallel Communication Anomaly
	21	BIT04: Excessive Parallel Battery Voltage Difference
	22	BIT05: Excessive Parallel Grid Voltage Difference
	23	BIT06: Excessive Parallel Grid Frequency Difference
	24	BIT07: Phase missing in parallel configuration
	25	BIT08: Parallel output synchronization lost
	26	BIT09: BMS fault
	27	BIT10: MCU fault
	28	BIT11: Reserved
	29	BIT12: Inverter load anomaly
	30	BIT13: Reserved
	31	BIT14: Reserved
	32	BIT15: Reserved

Fault Code 3	33	BIT00: Battery not connected
	34	BIT01: Battery under-voltage
	35	BIT02: Battery low voltage
	36	BIT03: Charger short circuit
	37	BIT04: Reserved
	38	BIT05: Battery overcharge
	39	BIT06: BMS loss
	40	BIT07: Over-temperature
	41	BIT08: Fan stalled
	42	BIT09: EEPROM failure
	43	BIT10: Overload
	44	BIT11: Generator waveform anomaly
	45	BIT12: Weak PV energy
	46	BIT13: Loss of parallel synchronization signal
	47	BIT14: Missing phase in parallel configuration
	48	BIT15: Incompatible parallel version
Fault Code 4	49	BIT00: Parallel communication error
	50	BIT01: Excessive grid voltage difference or frequency during parallel operation
	51	BIT02: Low SOC shutdown
	52	BIT03: Low SOC alarm
	53	BIT04: Excessive battery voltage difference or unconnected during parallel operation
	54	BIT05: Battery short circuit
	55	BIT06: Battery voltage below startup threshold
	56	BIT07: Generator overload
	57	BIT08: Generator Undervoltage
	58	BIT09: Generator Overvoltage
	59	BIT10: CT Reverse Connection
	60	BIT11: Grid Voltage Instability
	61	BIT12: Meter Communication Failure
	62	BIT13: Reserved
	63	BIT14: Reserved
	64	BIT15: Reserved