

# HYBRID ON-GRID SOLAR INVERTER USER MANUAL

## Model: WYIN36 / WYIN46 / WYIN5K





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### **1.Notes On This Manual**

### **1.1 Clarification**

This manual provides instructions for the assembly, installation, commissioning, and maintenance of the GH hybrid inverter. Please note that it does not include information on peripheral equipment or accessories, such as PV modules or energy storage batteries. For details on these devices, please refer to their respective manufacturer's manuals.

### **Target People:**



This manual is qualified for persons who have received electrical training, demonstrated knowledge and skills in operation this equipment. This person is able to deal with the dangers and hazards involved in installing electrical devices.

### **1.2 Additional Information**

For more information about our products, please visit our official website.

### 1.3 Storage of the Manual

Please keep this user manual properly for future reference. We cannot be held responsible for any damage that may occur as a result of not following the instructions provided in this manual.

### **1.4 Symbol Description**

The following table provides explanations for the symbols that will appear in this manual:

i MANUAL	MANUAL: Please read this manual carefully before use.
	<b>DANGER:</b> This symbol indicates a dangerous situation that, if not avoided, could result in death or serious injury.



<b>WARNING:</b> This symbol indicates a dangerous situation that, if not avoided, could result in death or serious injury.		
<b>CAUTION:</b> This symbol indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.		
<b>NOTE:</b> Failure to follow this warning could result in damage to the equipment.		

## 1.5 Warning symbols

Symbol	Description		
HIGH VOLTAGE	<b>Dangerous voltage warning!</b> This product works under high voltage. All operations on this product must be performed as described in the documents and by qualified professionals.		
	<b>Be careful of Heat!</b> This product may becomes hot during operation. Do not touch the product while it is in operation.		
i	<b>Follow Operating Instructions!</b> Before using this product, please read the product manual carefully. Follow all safety precautions and instructions described in the documents.		
	Grounding Protection Connection Point.		
	Direct Current (DC)		



$\sim$	Alternating Current (AC)
	<b>Dangerous Signal!</b> Risk of electric shock! The installation operation can only be performed after the inverter has been switched off and disconnected for at least 5 minutes.

## 2. Safety And Conformity

### 2.1 Safety Instructions



### Danger To Life Due To Lethal Voltages!

High voltage exists inside this inverter and on the power cord. Therefore, only authorized electricians should install and operate this equipment. Even if the inverter is disconnected, there may still be a risk of electric shock from high voltage!



### Danger Of Burn Injuries Due To Hot Housing Parts!

During operation, the four sides of the housing cover and the heat sink may become hot. Only touch the front cover of the inverter during operation.







### **PV Modules & Grounding Equipment**

Comply with the local requirements for grounding the PV modules and generator. We recommend connecting the generator frame and other electrically conductive surfaces in a way that ensures continuous conduction with ground, to provide optimal protection for the system and people.



#### **Capacitive Discharge Currents**

PV modules with a larger capacity than the ground, such as thin-film photovoltaic modules on metal substrates, can only be used if their coupling capacity does not exceed 470nF. During the charging and discharging operation, a leakage current will flow to the ground, and its magnitude depends on the installation of the PV modules such as aluminum foil on a metal roof) and the weather conditions (such as rain and snow). Generally, the leakage current does not exceed 30mA. If it exceeds this range, the inverter will trigger protection and automatically disconnect from the grid.



Do not attempt to open the device during operation!

### 2.2 DC and AC Breaker

Disconnecting the unit securely from the grid, the PV generators, and batteries by using DC and AC breaker. The DC and AC breaker should be capable of disconnect all non-ground conductors after installation.



### 2.3 Grounding of PV Modules

This inverter is a non-transformer isolated, and it is strictly prohibited to ground the PV modules directly. Only the mounting frame should be grounded. Otherwise, an error message "PV ISO Low" will be displayed.

### 2.4 Qualification Of Skilled Workers

- Knowledge of the operation and functionality of inverters.
- Instruction on how to handle the dangers and risks associated with installing and used of electrical devices.
- Training in the installation and commissioning of electrical devices.
- · Familiarity with all relevant standards and guidelines
- Understanding and adherence to this manual and all safety instructions.



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## **3. Product Description**

### 3.1 Inverter Overview

(Model: WYIN5K)

Overview (see Figure 1)









### 3.2 Unit Information

- The unit is bidirectional, which is suitable for PV system with battery storage. The energy generated by the PV system is primarily used for load consumption. Any excess energy is used to charge the battery directly injected into the public grid. In the event that the energy output from the photovoltaic is insufficient to support the connected load, the system will automatically draw energy from the battery if it has sufficient capacity. If the battery energy is insufficient to meet its own consumption needs, energy is obtained from the public grid.
- This hybrid Inverter supports working with energy storage batteries, so make sure you are using lead-acid or lithium batteries before connecting. Users can modify the setting through the inverter button, or APP, or Web server.



Connection (see Figure 2)



A	LCD Display	Е	COM Terminals
В	PV Input Terminals	F	WIFI Or GPRS Com Module and USB Port
С	Battery Input Terminals	G	AC Output Terminals
D	PV Input Switch	Н	Spec Label and Inverter Serial Number



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### 3.3 Inverter Storage

- The unit must be stored in its original packaging.
- The storage temperature should be always be between -25  $^\circ$  and +60  $^\circ$  .
- The relative humidity storage should always be between 0% and 95%.
- If storing a batch of units, the maximum number of layers for the original carton is five.

Note: Battery storage must comply with the specifications provided by the battery manufacturer.

### 3.4 Inspection of Unpacking

Thoroughly inspect the packaging upon receipt. If any damage to the packaging is visible, or if you find that the unit is damaged after unpacking, please notify the supplier immediately. If any damaged or missing components are noticed, please contact WANROY. Do not dispose of the original packaging. If you need to transport the unit, it is recommended to store it with the original packaging.

Product accessories (see Figure 3)



Figure 3



No	Components	Quantity(PCS)
А	Inverter	1
В	Mounting Frame	1
С	WIFI /USB	1
D	Cover Screw	2
E	СТ	1
F	Mounting Frame Fixings	4
G	Battery Input Terminations (SC16-8)	2

### **3.5 Installation and Electrical Connection**



### Danger to life due to fire or explosion

Despite careful construction, electrical devices have the potential to cause fires. Do not install the inverter near flammable and explosive materials!



#### Risk of burns due to hot housing cover and radiator

The inverter should be installed in an inaccessible place.



- All electrical installations must adhere to the IEE wiring rules. It is important to avoid removing the case of the inverter, as it does not contain user-serviceable parts. Please seek assistance from qualified service personnel for any repair work.
- All wiring and electrical installations should only be performed by a qualified electrician.
- Carefully remove the unit from its packaging and inspect it for any external damage. If you find any issues, please contact WANROY.



- This inverter is designed to be used with PV generation, and cannot be connected to other renewable energy devices.
- Both AC and DC voltage sources are terminated inside the PV Inverter. All AC and DC input and output must be disconnected before performing any maintenance.
- This unit is intended to supply power to the public grid only. Do not connect it to a generator or any other external power generating device, as it may cause severe damage to your equipment.
- Due to the DC capacitance inside the inverter, there may still be high voltage inside the PV inverter even after the device is disconnected from the grid and PV panels. Although the product is designed to comply all safety regulations, some parts and surfaces of the inverter generate high heat during operation. To reduce the risk of injury, avoid touching the heat sink on the sides and back of the unit while the inverter is in operation.

### 3.6 Basic installation requirements

These are guidelines for the installer to select a suitable location for installation, in order to avoid potential damages to the device and operators.

- The inverter should not be installed in direct contact with water or exposed to direct sunlight.
- The inverter should be installed at a minimum height of 91.4cm (3 feet) above the ground.
- The wall on which the inverter is installed must be sturdy and capable of bearing the weight of the inverter for an extended period of time.
- The humidity around the inverter should be between 0 95%, without any condensation.
- The installation location should be conveniently accessible for future maintenance.
- Do not install the inverter on buildings made of flammable or non-heat-resistant materials.
- Be sure that the inverter is out of the reach of children.
- Do not cover or place anything on the inverter.
- Avoid installing the inverter near strong magnetic signals, such as TV antennas, other antennas, or cables, and ensure that there is sufficient space for cooling the inverter.

- Provide optimal ventilation for the inverter to ensure adequate heat dissipation. The ambient temperature should be below 40°C to ensure optimal operation.
- Install the inverter vertically or at a maximum backward tilt of 15°, ensuring that the connector is at the lower end of the inverter. Avoid horizontal installation and tilting forward or sideways, as shown in Figure 4.



Figure 4

• Although the electrical components of the inverter are rated IP65, it is recommended to avoid prolonged exposure to sunlight, rain, and snow in the installation environment, as shown in Figure 5.

Figure 5

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• Ensure adequate heat dissipation by following the minimum clearance requirements from walls, other inverters, or objects, as shown in the table below and in Figure 6.

Direction	Min. clearance(cm)
above	60
below	60
sides	40
front	30



Figure 6

Multiple installation clearance reference (Refer to Figure 7)

- It is essential to maintain adequate clearance between individual inverters to prevent the circulation of ambient air from adjacent units.
- If necessary, increase the clearance space to ensure proper air circulation and sufficient cooling and heat dissipation of the inverter.





### Installing the Wall Mount



To avoid electric shock or other injury, check the existing electrical wiring system or plumbing installation before drilling bracket fixing holes.

• The size of the bracket is shown in figure 8(4 expansion screws, 2 wall screws).



• Using the mounting frame as a template, drill holes as shown in Figure 9.





**PLEASE NOTE:** The warranty will be void if the inverter is damaged due to the use of mounting fixtures that are not strong enough to support the weight of the unit or if the equipment is damaged due to installation that does not comply with the manufacturer's requirements.

### Wall mounting



A fall can result in equipment damage and other fatal injuries. Do not place the inverter on the stand unless you are sure that the mounting frame is securely mounted on the wall.

• Lift the inverter a little higher than the stand while taking its weight into account to ensure that it remains balanced. Then, hang the inverter on the bracket using the hook provided on the bracket, as shown in Figure 10.



Figure 10

• After confirming that the inverter is firmly fixed, insert and lock the two M4 security screws on the left and right sides in turn to prevent the inverter from falling off from the bracket (as figure 11).





Inspection of Inverter Installation Status

- Try to lift the inverter from the bracket to check the installation of the inverter. The inverter should be firmly inserted into the card slot.
- Please make sure to choose a suitable mounting surface to ensure that the inverter is stable and shake-free.

**Electrical connections** 

### Warning: High Voltage!

The conductive parts of the inverter contain high voltages that may cause electric shock. Prior to performing any work on the inverter, please disconnect the AC side, PV and battery side of the inverter. Never reverse the polarity of the battery, as doing so will damage the inverter and invalidate the warranty.



Electrostatic discharge (ESD) can damage electronic components. When replacing or installing the inverter, it is crucial to take appropriate anti-static measures. This includes wearing an anti-static wrist strap or using an ESD mat to prevent the build-up of static electricity.







Before connecting the DC power cord, ensure that the AC power supply is grounded. This is a crucial safety measure that helps to prevent electrical shock and damage to the inverter.

### 3.7 Inverter system diagram

Refer to Figures 12 and 13 for detailed illustrations of the inverter system.









Figure 13



3.7.1 Grid connection (AC grid), refer to Figure 14 and Figure 15.



AC The current specifications of the AC leakage switch are as follows:

Model	WYIN36	WYIN46	WYIN5K
Minimum current (A)	20A	32A	32A

Output cable cross-sectional area requirements:

Model	Electric Current(A)	Cross-sectional Area (mm²)
WYIN36	20A	2.5-4.0
WYIN46	32A	4.0-6.0
WYIN5K	32A	4.0-6.0







The cable length should not exceed 50 meters, because the line resistance existing on the cable will cause a large power loss.



Be sure to install a separate AC circuit breaker or other load disconnect device between the inverter and the grid to ensure that the inverter can safely disconnect the load in an emergency.

### 3.7.2 EPS (Emergency Power Supply) Connection

The EPS can provide a maximum output power of 4500w, and an emergency load can be connected to the EPS port. It is crucial to install an AC isolator or other load disconnection device between the EPS output of the inverter and the emergency load to ensure safe operation in case of an emergency. We recommend using an AC leakage circuit breaker with a specification of at least 32A to ensure proper protection.



The maximum output power of EPS is 4500w for the GH5000TL and GH4600TL models, and 3600W for the GH3600TL model. If the load is continuously greater than 4500W or 3600W, the inverter will stop outputting. Please note that the output power of EPS depends on the battery capacity.

Note: Do not connect to the grid, in case the machine is damaged due to wrong wiring!



3.7.3 PV panel connections (Refer to Figure 16 and Figure 17)



This device supports two PV access, refer to Figure 17.



### **PV Input Connection Terminal**

There are two MPPT's on the unit, so you can connect two independent MPPT channels.

- The maximum open-circuit voltage of each group of PV input should not be higher than 500V DC.
- Please check the design of the PV plant carefully to ensure compliance with this specification.
   When the ambient temperature of the PV panel is -10°C, the maximum open circuit voltage may appear, and the input voltage at this time must not exceed the maximum input voltage of the inverter (500V).



- Before connecting the PV panel to the DC terminal, please make sure the the polarity is correct. Incorrect polarity connections may damage the inverter.
- Please check the short-circuit current of the PV cell group. The total short-circuit current of the photovoltaic battery pack should be less than the maximum DC current of the inverter.
- Connect the positive and negative poles of the PV panel output to the positive (+) and negative (-) poles of the photovoltaic inverter. Each PV port on the inverter can withstand 15A.
- When PV is connected, the positive and negative of the same road should be connected to the same PV terminal (for example, the positive is connected to the positive of PV1, and the negative is connected to the negative of PV1).
- When PV has only one set of string input, please do not mix input area A and B.
- When PV panels are exposed to sunlight, there is high voltage. To reduce the risk of electric shock, avoid touching live parts and handle connection terminals with care.

Cable Sectional Area Requirements

Model	Electric Current(A)	Cross-sectional Area (mm²)
WYIN36	20A	4.0-6.0
WYIN46	20A	4.0-6.0
WYIN5K	20A	4.0-6.0

### 3.7.4 Connection of Energy storage battery

 A separate DC circuit breaker with a minimum rating of 150A must be installed between the inverter and the energy storage battery before connecting to ensure safe disconnection of the inverter during maintenance.



Reversing the positive and negative inputs may cause damage to the inverter!



• Connecting the battery with a suitable cable is important for safe and efficient system operation. To reduce the risk of injury, use the recommended cable size. Refer to Figure 18.



Grade	Description	Value (mm²)
A	Cable outer diameter	10-12mm²
В	cross-sectional area	15-25mm²
С	Bare wire length	10mm <sup>2</sup>

- It is important to follow the manufacturer's instructions when installing energy storage batteries.
- The maximum charging/discharging current of this inverter is 95A and 100A respectively.
- The rated battery voltage of this inverter is 51.2V, and the series voltage of the battery should not exceed 58.5V to prevent damage to the inverter and to ensure the warranty remains valid.

Please follow the steps below to check if the battery connection is correct, referring to Figure 19.

- Verify that the rated voltage of the battery matches the specifications of the inverter.
- ◊ Open the circuit breaker between the inverter and the battery.
- Check for correct polarity of the battery and inverter connections, ensuring that the positive
   and negative terminals are correctly aligned.
- ◊ Securely connect the DC cable of the energy storage battery to the terminal blocks.
- ♦ Tighten the DC wires to the battery input terminals of the inverter.
- Ouring commissioning, ensure that the correct battery protocol is selected so that it can be controlled by the Battery Management System (BMS).

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Using a lithium battery that is compatible and has been tested with the inverter is recommended. Make sure the communication is normal.

### 3.7.5 CT (Current Transducer) or ammeter connected to inverter

In the system, a CT (Current Transducer) or electricity meter must be installed to monitor the electrical energy consumption of the house and the state of the inverter (charging or discharging). The CT or ammeter should be installed at the grid input terminal to enable the inverter to monitor the household's overall electricity consumption.

Based on the CT readings, the inverter can adjust the PV power delivered to the grid to maintain a balance between the household's energy usage and generation level (see Figure 20).





Figure 20

The CT should be installed between the grid and the inverter, and it must be placed in front of the local load, around the live conductors. The arrow on the CT should point towards the grid (see Figure 21).



Figure 21



### **4.**Communication Instructions

### 4.1 Wi-Fi/GPRS

Hybrid inverters typically use Wi-Fi or GPRS as a standard wireless communication method.

### 4.2 Communication port connection

The communication port connection is made through DRM connection CN12, located on the front board as shown in Figure 22.





When the inverter receives an order from DRM0 connection, it will respond accordingly by reducing the output power to 0(by shorting the connection between RJ45 No.5 and No.6).



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### 4.3 Guidelines for Parallel and Group Three-phase Operation

Note: Parallel operation needs to be operated with the help of our monitoring server (please contact your supplier to obtain access).



Please refer to Figure 23 for the connection of parallel machines (take 3 parallel machines as an example).

### Note:

- Each inverter must be connected to the energy storage battery separately. Do not connect one battery to multiple inverters.
- When connecting the parallel machines, ensure that the live wire (L) is connected to the live wire (L) and the neutral wire (N) is connected to the neutral wire (N). Take care to avoid any incorrect connections, which could cause damage or safety hazards.

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 After completing the wiring of the power line and communication line, you need to set the master and slave machines, enable parallel function, and then set the communication address and phase number. The setting method is as following (please note that assistance from our monitoring service is required, and LCD screen and APP settings will be available later).

(1) Set the master and slave machines. In a given system, there should be only one master, with the remaining inverters being slaves(refer to the images below for clarification).

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🕂 🎝 ceshi	Batten						mode	Set
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	Chargi	Mode enablement				Set	ime is 2	Set
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DBC2309050	Battery o	harging ratio	Set			Number of ba	ttery strings	Set
	Battery of	lischarge ratio	Set			Set the data u	pload time	Set
	Battery n	nanufacturers	Set		0	Single phase	parallel setting	Set
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		Three-pl	hase mode setup		Set			Single phase	e pa	arallel mode	Set

(2) Set the communication address. The master inverter should be set to the master address,

while the slave inverters should be set to slave address 1, slave address 2, and so on (refer to the images below for clarification).

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	Battery	discharge ratio	Slave addr	ess6				up	load time	Set
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Search List ceshi	Batte Batte Float Char Char Char Char End tir Set sh Battery (	Set up the module Set the name Set the option Phase sign selection charging ratio discharge ratio	Mode enabl Parallel moc set up C	lement de le set Set Set	ttery set		Set Set the data	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 ctivation y charging and discharging current m attery strings	Set Set Set Set Set Set Set Set Set
Search         2           list         ceshi           Ist         Image: Constraint of the search of the se	Batte Batte Float Char Disct Char Char Char End tir Set sh Battery Battery Battery	Set up the module Set the name Set the option Phase sign selection Charging ratio discharge ratio manufacturers	Mode enable Parallel moc Set up C	lement de ancel			Set Set Set billion	cutoff SOC node nge 1 Enable This parameter ne 1 ne is 2 re is 2 Activation y charging and discharging current m attery strings upload lime parallel setting	Set Set Set Set Set Set Set Set Set



### (4) Select the default value for the phase number in parallel mode.

hi	Batter						$\sim$	mode	Set
EthanTest	Float c					_		range 1 Enable This parameter	Set
	Charg	Master and slave slots					Set	time 1	Set
EthanTest2	Discha	Mailing address					Set	ime 1	Set
QWER	Charg	··········						time is 2	Set
	Charg	Mode enablement					Set	ime is 2	Set
lestWift Ŝ WIFITEST	End tir	Phase sign selection					Set	Activation	Set
-  DBC2309014 DBC2309013	Set sh	(						y charging and discharging current m	Set
BBC2309050	Battery o	charging ratio		Set	0	Nu	umber of bat	tery strings	Set
	Battery d	lischarge ratio		Set		Se	et the data up	bload time	Set
	Battery n	nanufacturers		Set	0	Si	ingle phase p	parallel setting	Set
	Three-ph	nase mode setup		Set		Si	ingle phase p	parallel mode	Set
earch				В	attery se	et			
earch S	Batte	Set up the module		в	attery se	et		cutoff SOC	4
earch S	Batte Batte	Set up the module	Phase cinn	B	attery se	et		cutoff SOC	2
earch ©	Batte Batte Float	Set up the module Set the name	Phase sign	B	attery se	et		cutoff SOC node inge 1 Enable This parameter	
hi tea EthanTest DN888888888 DN88888888888888888888888	Batte Batte Float Char	Set up the module Set the name Set the option	Phase sign Default	B	attery se	et		cutoff SOC node nge 1 Enable This parameter ne 1	2
hi tea Ž Ethan Test M DN99998888 Ž Ethan Test2	Batte Batte Float Char Disct	Set up the module Set the name Set the option	Phase sign Default	B selection	attery se	et	^	cutoff SOC node inge 1 Enable This parameter me 1 he 1	
Aarch S hi tea	Batte Batte Float Char Disct Char	Set up the module Set the name Set the option	Phase sign Default Default A-phase	B selection	attery se	et	▲ ▲	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne 1 ne is 2	2
earch © hi tea a EthanTest m DN99998888 a EthanTest a EthanTest2 QWER a 123456 t	Batte Batte Float Char Disct Char Char	Set up the module Set the name Set the option	Phase sign Default Default A-phase B-phase	n selection	attery se	et	^ 	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
hi tea EthanTest DN888888888 EthanTest DN888888888 EthanTest DV89999888 EthanTest DV8588888 EthanTest DV85888888 DV85888888 DV85888888 DV85888888 DV85888888 DV85888888 DV85888888 DV85888888 DV85888888 DV85888888 DV85888888 DV858888888 DV858888888 DV8588888888 DV858888888 DV8588888888 DV858888888 DV858888888 DV858888888 DV8588888888 DV858888888888888 DV8588888888888888888888888888888888	Batte Batte Float Char Disct Char Char Char End tir	Set up the module Set the name Set the option	Phase sign Default Default A-phase B-phase C-phase	B selection	attery sε	et	^ 	cutoff SOC node inge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 Activation	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Parch         S           hi         Etea <ul></ul>	Batte Batte Float Char Disct Char Char Char End tir Set sh	Set up the module Set the name Set the option	Phase sign Default Default A-phase B-phase C-phase	B selection	attery sc	et	^	cutoff SOC node inge 1 Enable This parameter me 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Constraint         Constraint           bi         Image: Constraint of the second	Batte Batte Float Char Disct Char Char Char Char End tir Set sh Battery	Set up the module Set the name Set the option Phase sign selection charging ratio	Phase sign Default Default A-phase B-phase C-phase	a selection	attery se		A Number of	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current battery strings	22222222222222222222222222222222222222
Barch         C           hi         Image: Constraint of the second	Batte Batte Float Char Char Char End tir Set sh Battery	Set up the module Set the name Set the option Phase sign selection charging ratio discharge ratio	Phase sign Default Default A-phase B-phase C-phase	n selection	attery se		Number of Set the dat	cutoff SOC node nge 1 Enable This parameter ne 1 ne is 2 ne is 2 Activation y charging and discharging current battery strings a upload time	2232 2232 2232 2232 2232 2232 223 223 2
Dearch         Image: Constraint of the second	Batte Batte Float Char Discl Char Char End tir Set sh Battery Battery	Set up the module Set the name Set the option Phase sign selection charging ratio discharge ratio manufacturers	Phase sign Default Default A-phase B-phase C-phase	selection Set Set Set Set	attery se		Number of Set the data Single phase	cutoff SOC node inge 1 Enable This parameter ne 1 ne is 2 ne is 2 Activation y charging and discharging current battery strings a upload time se parallel setting	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

For group three-phase connections, please refer to the images below:

NOTE: Each inverter must be connected to a separate energy storage battery.

Do not connect one battery to multiple inverters.

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After connecting the power and communication lines, you will need to configure the master and slave settings, enable the group three-phase function, set the communication address, and phase sequence. Follow the steps below to configure these settings (requires monitoring server access).

(1) Configure the master and slave settings (there can only be one master in a system, with the remaining being slaves).

Search C				Batt	tery	set			
Inverter list		Battery t	уре	Set		0	Set the discha	arge cutoff SOC	Set
È- & ceshi		Batter						mode	Set
⊢ ¶ tea ⊢ ≗ EthanTest		Float					×	range 1 Enable This parameter	Set
		Chargi	Master and slave slots				Set	time 1	Set
EthanTest2		Discha	Mailing address				Set	ime 1	Set
⊡- ¶ QWER		Charg						time is 2	Set
- & Test		Charg	Mode enablement				Set	ime is 2	Set
⊡ ₩ lestWift		End tir	Phase sign selection				Set	Activation	Set
📾 DBC2309014		Set sh						y charging and discharging current m	Set
BBC2309050		Battery of	charging ratio	Set	1		Number of ba	ttery strings	Set
	ОВ	Battery of	discharge ratio	Set	<ul> <li>Set the data</li> </ul>		Set the data u	pload time	Set
		Battery r	nanufacturers	Set			Single phase	parallel setting	Set
	0	Three-pl	nase mode setup	Set			Single phase	parallel mode	Set

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Search 😋					Bat	ttery	set				
Inverter list		Batte	Set up the module							cutoff SOC	Set
E- L ceshi		Batte	Set the name	Master and	I slave slots					node	Set
⊢- <b>π</b> tea		Float								nge 1 Enable This parameter	Set
		Char	Set the option	Host				^		ne 1	Set
EthanTest2		Discł		Host						ne 1	Set
⊡- n QWER		Char	S	Slave mac	nine					me is 2	Set
E- & Test		Char								ne is 2	Set
⊡ ¥ lestwith		End tir	Phase sign selection					Set		Activation	Set
🛱 DBC2309014		Set sh								y charging and discharging current m	Set
DBC2309050		Battery	charging ratio		Set			Number of b	atte	ery strings	Set
		Battery	discharge ratio		Set			Set the data	upl	oad time	Set
		Battery	manufacturers		Set			Single phase	e pa	arallel setting	Set
	0	Three-p	hase mode setup		Set			Single phase	e pa	arallel mode	Set

(2) Configure the communication address by setting the host address for the master, slave address 1 for the first slave, and slave address 2 for the second slave.

Search C				Batte	ery se	et			
Inverter list		Battery t	уре	Set			Set the discha	rge cutoff SOC	Set
- & ceshi		Batten						mode	Set
⊟- ¶ tea		Float c					×	range 1 Enable This parameter	Set
		Chargi	Master and slave slots				Set	time 1	Set
EthanTest2		Discha	Mailing address				Set	ime 1	Set
⊡- ¶ QWER		Chargi					Sec	time is 2	Set
E- 120100		Chargi	Mode enablement				Set	ime is 2	Set
⊡- ¶ TestWifi		End tir	Phase sign selection				Set	Activation	Set
🛱 DBC2309014		Set sh						y charging and discharging current m	Set
BC2309013		Battery of	charging ratio	Set	P		Number of bat	tery strings	Set
		Battery of	lischarge ratio	Set			Set the data u	pload time	Set
		Battery manufacturers		Set			Single phase p	parallel setting	Set
	0	Three-ph	nase mode setup	Set			Single phase p	parallel mode	Set

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Invartar list		Batte	Set up the module						cutoff SOC	Set
		Batte	Set the name	Mailing ad	dress				node	Set
⊢ ♥ tea ⊢ ॾ EthanTest		Float		inainig da					inge 1 Enable This parameter	Set
	0	Char	Set the option	Host addre	SS		^		me 1	Set
EthanTest2	0	Discł		Host addre	229				ne 1	Set
⊡- ♥ QWER	0	Char	S	Slave addr	ess1				me is 2	Set
E- & Test	0	Char		Slave addr	ess2				ne is 2	Set
iestwitt		End tir	Phase sign selection	Slave addr	ess3				activation	Set
🛱 DBC2309014		Set sh		Slave addr	ess4			1	y charging and discharging current m	Set
BBC2309050		Batter	charging ratio	Slave addr	ess5			atte	ry strings	Set
		Batter	/ discharge ratio	Slave addr	ess6			uplo	bad time	Set
		Batter	manufacturers		Set		Single phas	e pa	rallel setting	Set
	0	Three-	phase mode setup		Set		Single phas	e pa	rallel mode	Set

### (3) Enable the group three-phase function.

		Battery t	уре		Set			Set the discha	arge cutoff SOC	Set
		Batter							mode	Set
inTest		Float c	(				range 1 Enable This parameter	Set		
N88888888		Charg	Master and slave slots			Set	time 1	Set		
inTest2		Discha	Mailing address					Set	ime 1	Set
456		Charg	induing address						time is 2	Set
		Charg	Mode enablement					Set	ime is 2	Set
TEST		End tir	Phase sign selection					Set	Activation	Set
C2309014		Set sh							y charging and discharging current m	Set
013		Battery of	charging ratio		Set	C		Number of ba	ttery strings	Set
		Battery of	discharge ratio		Set			Set the data u	pload time	Set
		Battery r	manufacturers		Set			Single phase	parallel setting	Set
	0	Three-pl	hase mode setup		Set			Single phase	parallel mode	Set
		Batte	Set up the module						cutoff SOC	Set
		Batte Batte	Set up the module Set the name	Mode enab	olement				cutoff SOC	Set Set
		Batte Batte Float	Set up the module Set the name	Mode enab	olement				cutoff SOC node nge 1 Enable This parameter	Set Set Set
ł		Batte Batte Float Char	Set up the module Set the name Set the option	Mode enab	olement e-phase mode	e		^	cutoff SOC node nge 1 Enable This parameter ne 1	Set Set Set
		Batte Batte Float Char Disct	Set up the module Set the name Set the option	Mode enab	e-phase mode	Ð		^	cutoff SOC node inge 1 Enable This parameter me 1 ne 1	Set Set Set Set
3		Batte Batte Float Char Discl Char	Set up the module Set the name Set the option	Mode enab Group thre Standalone Parallel mo	e-phase mode e mode ide	8		^	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 me is 2	Set Set Set Set Set
38 		Batte Batte Float Char Discl Char Char	Set up the module Set the name Set the option	Mode enable Group three Standalone Parallel mo Group three	e-phase mode e mode ide ee-phase mode	e		^	cutoff SOC node nge 1 Enable This parameter me 1 ne 1 ne is 2 ne is 2	Set Set Set Set Set Set
98888 98888 2		Batte Batte Float Char Discf Char Char Char End tir	Set up the module Set the name Set the option Phase sign selection	Mode enable Group three Standalone Parallel mo Group three	e-phase mode e mode ide ee-phase mode	e e		Set	cutoff SOC node nge 1 Enable This parameter me 1 ne 1 me is 2 ne is 2 Activation	Set Set Set Set Set Set Set
t 888888 998888 12 T 1309014 309013		Batte Batte Float Char Char Char Char End tir Set sh	Set up the module Set the name Set the option Phase sign selection	Mode enabled Group three Standalone Parallel mo Group three	e-phase mode e mode ide ee-phase mode	e e		∧ Set	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current m	Set Set Set Set Set Set Set Set
t 888088 999888 12 T 309014 309013 309050		Batte Batte Float Char Discl Char Char Char Char End tir Set sh Battery c	Set up the module Set the name Set the option Phase sign selection charging ratio	Mode enabled Group three Standalone Parallel mc Group three	e-phase mode er mode de see-phase mode	e e		Set Number of ba	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current m ttery strings	Set Set Set Set Set Set Set Set
4 888888 42 T 309014 309013 309050		Batte Float Char Disct Char Char Char End tir Set sh Battery of Battery of	Set up the module  Set the name Set the option  Phase sign selection  charging ratio tischarge ratio	Mode enabled Group three Standalone Parallel mc Group three	e-phase mode e mode de ee-phase mode	e C		Set	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current m ttery strings pload time	Set Set Set Set Set Set Set Set Set
88 88 11 14 13 50		Batte Batte Float Char Disct Char Char End tir Set sh Battery o Battery o	Set up the module  Set the name Set the option  Phase sign selection  tharging ratio tischarge ratio nanufacturers	Mode enabled Group three Standalone Parallel mc Group three	e-phase mode e mode de ee-phase mode set Set Set	e e		Set Set Single phase	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current m ttery strings pload time parallel setting	Set Set Set Set Set Set Set Set Set



(4)Configure the phase number setting as follows: set the master to A phase, the slave 1 to B  $\,$ 

phase, and the slave 2 to C phase.

Search C										
r lint		Battery ty	уре		Set			Set the discha	rge cutoff SOC	Set
ceshi		Batten							mode	Set
- ¶rtea ≟ ≗ EthanTest		Float c					_		range 1 Enable This parameter	Set
DN88888888		Charg	Master and slave slots					Set	time 1	Set
EthanTest2		Discha	Mailing address					Set	ime 1	Set
• 🛉 QWER		Charg						Jet	time is 2	Set
Test		Charg	Mode enablement					Set	ime is 2	Set
- ₱ TestWifi ⊡- 墓 WIFITEST		End tir	Phase sign selection				1	Set	Activation	Set
DBC2309014		Set sh	- nace eight concentration						y charging and discharging current m	Set
DBC2309050		Battery c	harging ratio		Set	0		Number of bat	tery strings	Set
		Battery d	lischarge ratio		Set			Set the data u	bload time	Set
		Battery n	nanufacturers Set O S		Single phase i	arallel setting	Set			
			sat Sir			•				
Search	0	Three-ph	aase mode setup		Set	tery set		Single phase	arallel mode	Set
Search ©	0	Three-ph	ase mode setup		Set	tery set		Single phase p	arallel mode	Set
Search C		Three-ph Batte	ase mode setup Set up the module		Set	tery set		Single phase p	cutoff SOC	Set Set
Search © er list ceshi tea		Three-ph Batte Batte Float	Set up the module	Phase sign	Set Bat	tery set		Single phase p	cutoff SOC node noce 1 Enable This parameter	Set Set Set
Search er list c ceshi + ♦ tea - ↓ Ethan Test ↓ DN88888888		Three-ph Batte Batte Float Char	Set up the module Set the name Set the option	Phase sign	Set Bat	tery set		Single phase p	cutoff SOC node nge 1 Enable This parameter me 1	Set Set Set Set Set
Search € er list ceshi + tea = Ethan Test		Three-ph Batte Batte Float Char Disct	Set up the module Set the name Set the option	Phase sign Default	Set Bat	tery set		Single phase p	cutoff SOC node nge 1 Enable This parameter me 1 he 1	Set Set Set Set Set Set
Search er list ceshi		Three-ph Batte Batte Float Char Disct Char	Set up the module Set the name Set the option	Phase sign Default Default	Set Bat	tery set		Single phase p	cutoff SOC node nge 1 Enable This parameter me 1 ne 1 me is 2	Set Set Set Set Set Set Set
Search         3           er list         ceshi           + ● tea         -           - ■ Ethan Test         -           - ■ Ethan Test2         -           - ■ ON8888888         -           - ■ Ethan Test2         -           - ■ 123456         -           Test         -		Three-ph Batte Batte Float Char Disct Char Char	Set up the module Set the name Set the option	Phase sign Default Default A-phase B-phase	Set	Lery set		Single phase	cutoff SOC node nge 1 Enable This parameter me 1 ne 1 me is 2 ne is 2	Set Set Set Set Set Set Set Set Set
Search         C           er list         € tea                ▲ Ethan Test          ■ DN8988888                 ▲ DN99998888          ■ DN8888888                 ▲ DN99988888          ■ DN8888888                 ▲ DN99988888          ■ DN89888888                 ▲ DN999988888          ■ DN999988888                 ▲ Ethan Test2          ■ A WFITEST		Three-ph Batte Batte Float Char Disct Char Char Char End tir	Set up the module Set the name Set the option Set the option	Phase sign Default Default A-phase B-phase C-phase	Set Bat	C tery set		Single phase	cutoff SOC node nge 1 Enable This parameter me 1 ne 1 ne is 2 ne is 2 Activation	Set Set Set Set Set Set Set Set Set Set
Search         C           ar list         ceshi           teshi         f           ★         EthanTest           →         # EthanTest           →         DN88888888           ▲         DN99998888           ▲         EthanTest           →         Italian Test2           →         At 123456           Lifest         ★           →         TestWifi           →         WIFITEST           →         DBC2209014		Three-ph Batte Batte Float Char Disct Char Char Char Char End tir Set sh	Set up the module Set the name Set the option Phase sign selection	Phase sign Default Default A-phase B-phase C-phase	Set Bat	Letry set		Single phase p	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current m	Set Set Set Set Set Set Set Set Set Set
Search         3           er list         ceshi           t eta         -           -         2           -         2           -         2           -         2           -         2           -         2           -         2           -         2           -         3           -         3           -         4           -         123456           -         4           -         123456           -         4           -         10           -         123456           -         4           -         10           -         10           -         10           -         10           -         10      10         10           -         10           -         10           -         10           -         10           -         10           -         10		Three-ph Batte Batte Float Char Disct Char Char Char End tir Set sh Battery of	Set up the module Set the name Set the option Phase sign selection charging ratio	Phase sign Default Default A-phase B-phase C-phase	Set Bat selection	tery set		Single phase	cutoff SOC node nge 1 Enable This parameter me 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current m tery strings	Set Set Set Set Set Set Set Set Set Set
Search       3         ar list       • tea		Three-ph Batte Batte Float Char Disct Char Char Char End tir Set sh Battery o Battery o	Set up the module Set the name Set the option Phase sign selection charging ratio tischarge ratio	Phase sign Default Default A-phase B-phase C-phase	Set Bat selection			Single phase	cutoff SOC         node         nge 1 Enable This parameter         ne 1         ne 1 2         ne is 3         ne is 4         ne is 5         ne is 6         ne is 7         ne is 8         ne is 8         ne is 9         ne is 1         ne is 2         ne is 2         ne is 2         ne is 3         ne is 4         ne is 5         ne is 6         ne is 7         ne is 8         ne is 8         ne is 9         ne is 9	Set Set Set Set Set Set Set Set Set Set
Search       C         ar list       ceshi         • tea       • • • • • • • • • • • • • • • • • • •		Three-ph Batte Batte Float Char Disct Char Char Char End tir Set sh Battery of Battery of Battery of	Set up the module  Set the name Set the option  Phase sign selection  charging ratio tischarge ratio manufacturers	Phase sign Default Default A-phase B-phase C-phase	Set Bat selection			Single phase	cutoff SOC node nge 1 Enable This parameter ne 1 ne 1 ne is 2 ne is 2 Activation y charging and discharging current m tery strings pload time arallel setting	Set Set Set Set Set Set Set Set Set Set



WYIN5K

5. LCD Display



### Panel keyboard introduction

Up	Previous	$\uparrow$
Down	Next	$\checkmark$
Enter	Confirm	$\checkmark$
Esc	Exit	U

### 5.1 LED indicators and their respective status

Status	Grid connection status (blue)	Off-grid status (blue)	Warning light (red)
On grid	always on	/	/
Waiting for on grid	flashing	/	/
Off grid	/	always on	/
waiting for off grid	/	flashing	/
Alarm	/	/	always on



### **5.2 Menu Introduction**

## 5.2.1 Operating parameters

On the main interface, press the "Down  $\checkmark$ " key to access the grid, battery, PV, and load information screen.

Main interface	Down	AC information
		Voltage ***.*V
		Current **.**A
		Fre: **.**Hz
		PF:**
		P Power: ****W
		S Power. ****VA
	Down	Bat information
		Туре: ****
		Capacity: ***AH
		Voltage: ***.*V
		Current **.**A
		Power: ****W
		SOC: ***%
	Down	PV information
		PV1 Voltage: ***.*V
		PV1 Voltage: ***.*V PV1 Current **.**A
		PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W
		PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W PV2 Voltage: ***.*V
		PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W PV2 Voltage: ***.*V PV2 Current **.**A
		PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: *****W PV2 Voltage: ***.*V PV2 Current **.**A PV2 Power: ****W
		PV1 Voltage: ***."V PV1 Current **.**A PV1 Power: *****W PV2 Voltage: ***."V PV2 Current **.**A PV2 Power: *****W
	Down	PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: *****W PV2 Voltage: ***.*V PV2 Current **.**A PV2 Power: *****W
	Down	PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W PV2 Voltage: ***.*V PV2 Current **.**A PV2 Power: ****W Load information Voltage: ***.*V
	Down	PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W PV2 Voltage: ***.*V PV2 Current **.**A PV2 Power: ****W Load information Voltage: ***.*V Power: **.**W
	Down	PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W PV2 Voltage: ***.*V PV2 Current **.**A PV2 Power: ****W Load information Voltage: ***.*V Power: **.**W BackUp
	Down	PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W PV2 Voltage: ***.*V PV2 Current **.**A PV2 Power: ****W Load information Voltage: ***.*V Power: **.**W BackUp Voltage: ***.*V
	Down	PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W PV2 Voltage: ***.*V PV2 Current **.**A PV2 Power: ****W Load information Voltage: ***.*V Power: **.**W BackUp Voltage: ***.*V
	Down	PV1 Voltage: ***.*V PV1 Current **.**A PV1 Power: ****W PV2 Voltage: ***.*V PV2 Current **.**A PV2 Power: ****W Load information Voltage: ***.*V Power: **.**W BackUp Voltage: ***.*V Current **.**A Power: ****W



5.2.2 On the main interface, press the "Up  $\uparrow$ " key to access the main menu interface, which offers the following 5 options:

- 1. System setting;
- 2. Advanced settings;
- 3. System information;
- 4. Energy statistics;
- 5. Event information



### 5.2.3 System settings

In the system settings, press "Enter  $\checkmark$ " to access the sub menu interface, which displays the following 3 options.





(1) Language Settings



(2) System Time Settings

2.System time Enter 2022/07/19 17:03:16

(3) Working Mode Settings



**a. Electricity selling mode:** Energy storage batteries and photovoltaic power generation can sell power to the grid during a set time period.

**b. Self-Generation and Self-Usage Mode:** When photovoltaic energy meets the load demand, any excess energy charges the battery.

### 5.2.4 Advanced Settings

In "Advanced Settings", press "Enter 🖌" to enter the submenu interface.

This submenu interface offers 8 options, which are displayed across 2 pages.



2.Advanced setting	Enter	1.Battery parameter	
		2.Charge/Discharge	
		3.Soc correction	
		4.Forced to activate	
		5.Turn on/off	
		6.Wifi restart	
		7.Max export	
		8.UPS function	

**1.Battery parameter settings.** This submenu interface contains 11 options divided into 3 pages.

1.Battery parameter Enter 1.BMS Type

2.BAT Cap

3.Dis Min V

4.Chg Max V

5.Dis Stop SOC

6.ВАТ Туре
7.Chg Limit
8.Dischg Limit
9.BAT Factory
10 Float V

11.BMS Cell Type



**1) BMS Type:** Battery charging and discharging maximum current mode(0: Default 1: Battery Control Charging Maximum Charging Current; 2: Battery Control Charging and Discharging Maximum Current).

**2) BAT Cap setting:** This parameter is used to set the capacity (in Ah) of the battery. This setting is only applicable in lead-acid battery mode.

3) Dis Min V setting: This parameter is used to set the minimum discharge cut-off voltage.

4) Chg Max V setting: This parameter is used to set the maximum charging shutdown voltage.

**5) Dis Stop SOC Setting:** This parameter is used to set the stop discharge state of charge(SOC) for the battery.

6) BAT Type: Set the battery type (0: lead-acid battery; 1: lithium battery)

7) Chg Limit: Set the maximum charging rate for the battery.

8) DisChg Limit: Set the maximum discharge rate for the battery.

**9) BAT Factory:** BMS Protocol Selection. This parameter is used to set the communication protocol of the battery management system(BMS) for the inverter.

(0: Donnergy CAN; 1: PYLON CAN)

10) Float V Setting: This parameter is used to set the float charge voltage for the battery.

Enter

**11) BMS cell type:** Set the number of battery cells (0: Custom; 1: 16 strings; 2: 15 strings. the default is 16 strings.)

#### A. Charge/Discharge Time Setting

Can set: 1 Charging time; 2 Discharging times

2.Charge/Discharge

DC Chg Enable				
Start :xx:xx	End:xx:xx			
DC DisChg E	nable			
Start1:xx:xx	End1:xx:xx			
Start2 :xx:xx	End2:xx:xx			

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### B. SOC correction / SOC Calibration

This feature can be used to calibrate the state of charge (SOC) of a lithium battery by fully charging and discharging the battery one time. Please note that this feature requires elevated permissions to be enabled.



### C. Forced to activate / Forced Battery Activation



### D. Turn/Switch the inverter on and off



### E. Restart the WiFi



F. Set the maximum power for the grid port





### G. 7. UPS function (This function is disabled by default.)



### 5.2.5 System information

In the system information setting column, press "Enter  $\checkmark$ " to access the submenu interface. The following 3 options will be displayed:

### **(1) INV Information**



### (2) Bat/Battery information

This section is divided into 3 screens. Use the "Down  $\checkmark$ " or "Up  $\uparrow$ " key to switch between screens. The Battery Information is mainly used to display battery-related parameters.

2.Bat information Enter	1 Bat Type	6.ВАТ Туре	
	n.bat type	7.BAT Chg Limit	
	2.Bat Cap	8.BAT Dischg Limi	t
	3.Dis Min V	9.BAT Factory	
	4.Chg Max V	10.Dis stop soc	
	5.Dis stop soc		_
		11.BAT Type	

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### **③ Grid Information**

3.Grid information	Enter	OVP1	OVP2
		UVP1	UVP2
		OFP1	OFP2
		UFP1	UFP 2

### 5.2.6 Energy statistics

Press "Enter 🗸 " to access the submenu interface, where the following 4 options will be displayed:

4.Energy statistics	Enter	1.Day energy
		2.Month energy
		3.Year energy
		4.Total energy

(1) Daily Energy Production: This page displays the daily energy production in numerical values and histograms.

Note:

- PV Exp --- Photovoltaic output energy
- AC Exp --- AC output energy
- AC Imp --- AC input energy
- Bat Chg --- Battery charging energy
- Bat Dis --- Battery discharge energy
- INV Exp --- -Inverter output energy
- INV Imp ----Inverter input energy

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Monthly energy production, annual energy production, and cumulative energy production are also displayed in numerical values and histograms.

### 5.2.7 Event information

In the event information setting, press "Enter  $\checkmark$ " to access the submenu interface, which displays the following 2 options.





1) Current Error Message: Displays the current error message, which will be empty when no error is reported.

1.Current fault	Enter	Null
-----------------	-------	------

2) Historical Error Information: Displays the history of error messages. There are a total of 3 pages, and you can switch between pages using the the "Down  $\checkmark$ " or "Up  $\uparrow$ " keys. Each page displays 3 historical error messages. When there are no error currently reported, the display will be empty.



### 5.3 Auto-test function

1. Press and hold the Enter  $\checkmark$  and ESC  $\bigcirc$  key at the same time for 3 seconds to enter the Auto-test function.

2. Wait about 15 minutes for the inverter to automatically check and return to the main screen.





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### 6. Turn On/Off the Inverter

### 6.1 Turning On the Inverter

- (1) Turn on the AC circuit breaker
- (2) Turn on the PV DC switch
- (3) Turn on the battery breaker

(4) When the photovoltaic voltage is higher than 150V or the battery voltage is higher than 42V, the inverter will automatically start (the screen light up, and it will enter standby mode)

### 6.2 Disconnecting the Inverter

- (1) Disconnect the AC circuit breaker to prevent the inverter from being reactivated.
- (2) Disconnect the battery breaker to ensure the inverter cannot be reactivated.
- (3) Turn off the PV switch
- (4) Verify the inverter's running status
- (5) Wait for the LCD screen to turn off before assuming the inverter shuts down completely.

### 7. Maintenance and Cleaning

### 7.1 Thermal check

If the inverter often frequently reduces output power due to high temperature, please check whether the inverter is covered or clean the radiator to improve heat dissipation. You may also need to adjust the inverter's heat dissipation environment.

### 7.2 Inverter cleaning

If the surface of the inverter is dirty, please turn off the inverter before cleaning the shell.

### 7.3 DC Switch Inspection

Regularly check inspect the circuit breaker and the cable for ant abnormalities. If you notice any signs of damage, such as visible discoloration or physical damage to the cable or the circuit breaker, please contact the installer for assistance.







It is recommended to operate it once a year [turn the rotary switch of the DC switch from "on" to "off" continuously for 5 times]. This cleans the rotary switch and the contact points of the switch, which increases the electrical withstand time of DC disconnection.

### 8. Precautions for the Repairing

### 8.1 Disassemble the Inverter

(1) Disconnect the inverter according to the instructions

DANGER

- (2) Unplug all connecting wires from the inverter
- (3) Remove the inverter from the bracket, and unscrew the bracket screws

Risk of burns from the shell of inverter during operation! Please wait for 20 minutes after shutting down, and then disassemble the shell after it cools down!

### 8.2 Packaging the Inverter

If possible, pack the inverter in its original carton and secure it with adhesive tape. If the original packaging is no longer available, please use a packaging box that can fully support the weight and size of the inverter. Ensure that the carton is completely closed for safe transportation.

### 8.3 Storing the Inverter

Store the inverter in a dry place with an ambient temperature between -25°C and +60°C.



### 9. Working Modes

This series of hybrid inverters has the following main working modes:

### 9.1 Self-Generation and Self-Consumption Mode:

PV energy is given priority for meeting load demand. When PV energy is insufficient to meet the load demand, the battery is discharged to provide power. When PV energy exceeds the load demand, excess energy charges the battery.

#### Priority order: Load > Battery > Grid





#### PV deficiency



### 9.2 Electricity Selling Mode:

Energy storage batteries and photovoltaic power generation can sell power to the grid during a set time period.

### Priority order: Load > Grid > Battery





## 10.Technical Parameters

Model	WYIN5K	WYIN46	WYIN36	
PV Input (DC)				
Max input power(W)	7000W	6600W	5200W	
Max input voltage(V)	500V			
Starting voltage	150V			
PV input voltage range	150V ~ 500V			
MPPT voltage range	120V ~430V			
MPPT quantity	2			
Number of Strings per MPPT	1			
Max. Input Current per MPPT (A)	15A			
AC Output Data				
Model	WYIN5K	WYIN46	WYIN36	
Nominal Apparent Power Output to Utility Grid (W)	5000W	4600W	3600W	
Rate Power (Charge)	5000W	4600W	3600W	
Rate Power(Discharge)	5000W	4600W	3600W	
Max. Apparent Power Output to Utility Grid (VA)	5500VA	4600VA	3960VA	
Max. AC Current Output to Utility Grid (A)	23.9A	20A	17.2A	
Nominal Output Voltage (V)	230V			
Nominal AC Grid Frequency (Hz)	50Hz			
Max. Total Harmonic Distortion	<3%			
Power Factor (cos)	~0.99 (Adjustable from 0.8 leading to 0.8 lagging)			



AC Output Data (Back-up)				
Model	WYIN5K	WYIN46	WYIN36	
Back-up Nominal Apparent Power (W)	4500W	4500W	3600W	
Nominal Output Voltage (V)	230V			
Nominal Output Freqency (Hz)	50Hz (60Hz optional)			
Switch Time	<20ms (capacitive load); <10ms (resistive load)			
Total Harmonic Distortion (Linear Load)	<3%			
Overload Capacity	110% 30s / 120% 10s / 150% 80ms			
Battery				
Model	WYIN5K	WYIN46	WYIN36	
Battery Voltage Range (V)	41.6~ 58.5			
Max. Continuous Charging Current (A)	95A(PV&AC hybrid charging)	95A(PV&AC hybrid charging)	80A(PV&AC hybrid charging)	
Max. Continuous Discharging Current (A)	100A	100A	85A	
Battery Type	Lithium / Lead-Acid			
Communication Way	RS485/CAN			



Conversion Efficiency		
Model	WYIN5K	
Max. Efficiency	97.8%	
EU Efficiency	97%	
Max. Battery to AC Efficiency	95%	
MPPT Efficiency	99.99%	
IP Rate	IP65	
Noise	<35dB	
Operating Temperature Range (°C)	-25°C~+60°C	
Cooling Method	Free Convection	
Relative Humidity	0 to 95 %, non-condensing	
Installation Altitude above Sea Level	Up to 2000 m above sea level	
Self-consumption at Night (W)	<10W	
Display	LCD	
Communications	USB/RS485/CAN	
Warranty	5 years	
Dimensions (H x W x D mm)	580 x 350 x 230mm	
Weight	25kg	



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