LiFePO4 Battery User Manual

LV 15.36KWH

LV 16.07KWH

LV 16.12KWH



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1. About This Manual

This manual will provide detailed product information and installation instructions for users of the wall-mounted series products. Please read this manual carefully, and put this manual in a place where you can install, operate, and obtain it conveniently.

The safety precautions mentioned in the manual do not represent all the safety matters that should be observed, but are only supplementary to the safety precautions. When installing, operating, and maintaining equipment, local safety regulations and norms should be followed. Only trained professionals can install, operate and maintain equipment. The responsibility for losses will be not covered as the issue caused by violation of general safety operation requirements or violation of safety standards for the design, production, and use of equipment. Installation and maintenance personnel must have high-voltage and AC power operation skills. When installing, operating, and maintaining equipment, they must not wear any conductive objects, such as watches, bracelets, bracelets, and rings, and prevent moisture from entering the equipment.

Safety Instructions

DC short circuit Danger

The power system provides a DC-regulated power supply, and a DC short circuit will damage the equipment and cause personal injury.

Anti-static

The static electricity generated by the human body will damage the electrostatic sensitive components on the board. Before touching the plug-in, circuit board or chip, make sure to take proper anti-static measures.

Operate Attention

The power must be cut off first before operation, do not hot-line work.

Use Professional Tools

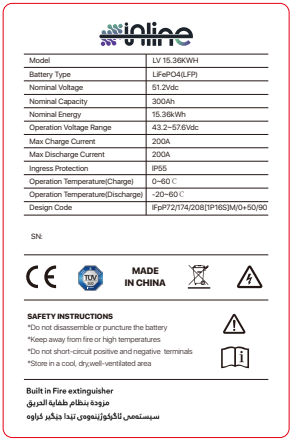
Always use professional tools instead of personal tools when working with high voltage and AC power

High Voltage Danger

The high-voltage power supply provides power for the operation of the equipment. Direct contact or indirect contact with high-voltage power supply through wet objects will cause fatal danger.

2. Label Explanation

The label contains the following information



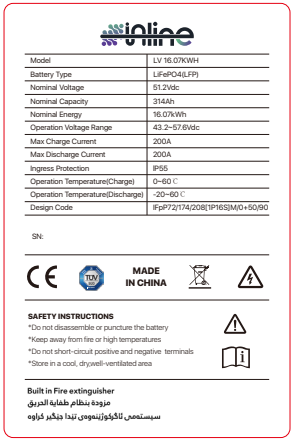
Model	LV 15.36KWH
Battery Type	LiFePO4(LFP)
Nominal Voltage	51.2Vdc
Nominal Capacity	300Ah
Nominal Energy	15.36kWh
Operation Voltage Range	43.2~57.6Vdc
Max Charge Current	200A
Max Discharge Current	200A
Ingress Protection	IP55
Operation Temperature(Charge)	0~60℃
Operation Temperature(Discharge)	-20~60℃
Design Code	iFpP72/174/208[1P16S]M/0+50/90

SN:

MADE IN CHINA

SAFETY INSTRUCTIONS
*Do not disassemble or puncture the battery
*Keep away from fire or high temperatures
*Do not short-circuit positive and negative terminals
*Store in a cool, dry,well-ventilated area

Built in Fire extinguisher
مزودة بنظام طفاية الحريق
سیستەمی ئاگرکوژێنەوەی تیدا دیگیر کراوە



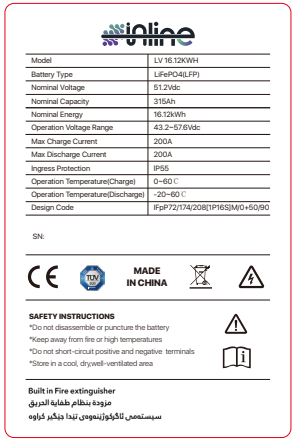
Model	LV 16.07KWH
Battery Type	LiFePO4(LFP)
Nominal Voltage	51.2Vdc
Nominal Capacity	314Ah
Nominal Energy	16.07kWh
Operation Voltage Range	43.2~57.6Vdc
Max Charge Current	200A
Max Discharge Current	200A
Ingress Protection	IP55
Operation Temperature(Charge)	0~60℃
Operation Temperature(Discharge)	-20~60℃
Design Code	iFpP72/174/208[1P16S]M/0+50/90

SN:

MADE IN CHINA

SAFETY INSTRUCTIONS
*Do not disassemble or puncture the battery
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Built in Fire extinguisher
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سیستەمی ئاگرکوژێنەوەی تیدا دیگیر کراوە



Model	LV 16.12KWH
Battery Type	LiFePO4(LFP)
Nominal Voltage	51.2Vdc
Nominal Capacity	315Ah
Nominal Energy	16.12kWh
Operation Voltage Range	43.2~57.6Vdc
Max Charge Current	200A
Max Discharge Current	200A
Ingress Protection	IP55
Operation Temperature(Charge)	0~60℃
Operation Temperature(Discharge)	-20~60℃
Design Code	iFpP72/174/208[1P16S]M/0+50/90

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3. Product Description

This product is a lithium iron phosphate battery (LFP LiFePO4) composed of 16 cells in series. Which is suitable for home energy storage systems. It can be customized according to customer needs to meet diverse application scenarios and provide stable power for various equipment of users.

4. Product Advantages

a. Built-in Battery Management System (BMS): Overcharge, overdischarge, overcurrent, temperature control, short circuit and other protection functions.

b. Active Balance Function: There is a voltage equalization function during the charging.

c. High Cost Performance: High safety performance, long service life, stable and reliable quality.

d. Expandable: Equipped with RS232/ RS485/ CAN bus ports, support up to 16 units in parallel.

e. Wide Working Temperature: -20℃ to 60℃, excellent high-temperature discharge performance.

f. Convenient: Modular design, small size and lightweight, easy to install and maintain.

5. Product Technical Parameters

5.1 Specification

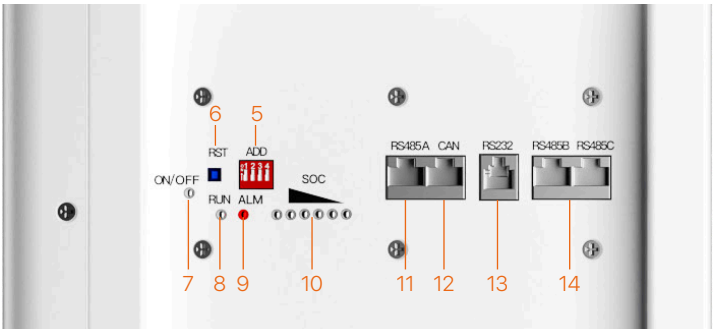
Item	Specifications		
Model	LV 15.36KWH	LV 16.07KWH	LV 16.12KWH
Nominal Voltage	51.2V	51.2V	51.2V
Operating Voltage	43.2V-57.6V	43.2V-57.6V	43.2V-57.6V
Nominal Capacity	300AH	314AH	315AH
Total Energy	15360Wh	16076Wh	16128Wh
Configuration	1P16S	1P16S	1P16S
Charging Cut-off Voltage	58.4V	58.4V	58.4V
Discharge Cut-off Voltage	43.2V	43.2V	43.2V
Operation Temperature	-20℃～60℃	-20℃～60℃	-20℃～60℃
Standard Charging Current	50A	50A	50A
Max Continuous Charging Current	200A	200A	200A
Max Continuous Discharge Current	200A	200A	200A
Dimension	500*255*885mm	500*255*885mm	500*255*885mm
Net weight	112KG	112KG	112KG

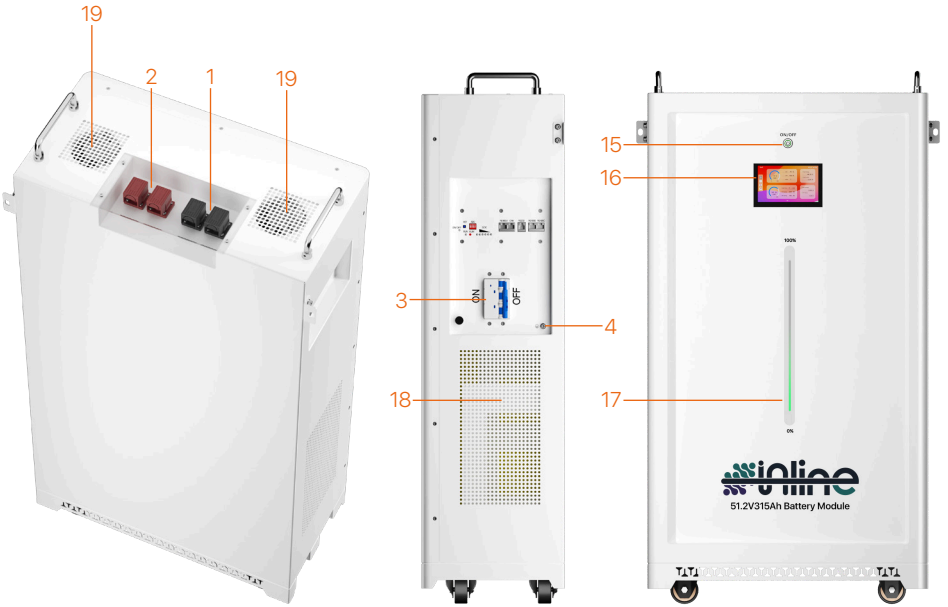
5.2 Interface Overview

P.S: There will be some differences in the appearance of the battery due to the version.

As shown in the picture

Take LV 16.12KWH as example





Position	Item	Description
1	P-	The negative terminal of the battery, can be connected to the negative pole of the inverter through a cable for DC output.
2	P+	The positive terminal of the battery, can be connected to the positive pole of the inverter through a cable for DC output.
3	Circuit breaker	Protect the battery against overloads and short circuits
4	Ground wire	Ground wire interface
5	ADD	Setting up battery parallel communication and inverter communication
6	RST	Manual-return switch button
7	Power Indicator	Turn on then light-on, turn off then light-off
8	RUN	Indicating the normal operation status of the battery
9	Alarm	Indicating the abnormal state of the battery, if there is an low voltage or over voltage, the alarm will sound.
10	SOC	6 indicators, indicating the remaining power status.
11	RS485 A	RS485 port for the inverter or the upper system communication
12	CAN	CAN port for the inverter communication
13	RS232	Communication port for the upper system.
14	RS485 B/C	RS485 port for parallel communication
15	Power switch	The switch for turn on/turn off the battery pack.
16	Touch Colorful Screen	Display battery voltage, SOC, temperature, etc.
17	LED Strip	Display the Battery SOC
18	Ventilation Holes	Ventilation and heat dissipation
19	Air Fan	Ventilation and heat dissipation

5.3 Battery Management System（BMS）

5.3.1 Overcharge Protection

When the voltage of any single cell or whole battery pack is higher than the set value during the charging, and the duration reaches the limited time, the system enters the over charging protection state automatically, the charging MOS is turned off at the same time, and the battery cannot be charged. After the voltage of each cell and the whole battery pack drops below the cell over charging recovery value, the over charging protection state is released. It can also be released by discharging to return to normal state.

5.3.2 Overdischarge Protection

When the voltage of any single cell or whole battery pack is lower than the set value during discharging, and the duration reaches the limited time, the system enters the overdischarge protection state, the discharge MOS is turned off, and the battery cannot be discharged. After the overdischarge protection of the battery pack occurs, it can be released by charging the battery pack.

5.3.3 Overcurrent Protection

During charging and discharging, when the current exceeds the set value of the protection current, and the duration reaches the limited time, the system enters the overcurrent protection state, the charging and discharging MOS will be turned off automatically, and the battery cannot be charged and discharged, charging and discharging the battery pack can release the overcurrent protection state.

5.3.4 Over Temperature Protection

When the NTC detects the temperature of the battery cell surface is higher than the setting value of over temperature protection during charging and discharging, the management system enters the over temperature protection state, the charging or discharging MOS is turned off, and the battery pack cannot be charged or discharged in this state.

5.3.5 Low Temperature Protection

When the NTC detects that the temperature of the cell surface is lower than the setting value of low temperature protection during charging and discharging, the management system enters the low temperature protection state, the charging or discharging MOS is turned off, and the battery pack cannot be charged or discharged in this state.

5.4 Optional Upgrade Feature

Some series models are equipped with the following optional upgraded features: touch screen and led strip.

Touch Colorful Screen

- Colorful Display: Touch Screen, easy to operate.
- Multi-language: Chinese, English, Arabic, German, Spanish, French, Romanian, Polish,Kurdish,Czech,Danish, Dutch, Bulgarian, Ukrainian, Icelandic, Italian,Thai
- System Theme: Support Dark Theme



LED Strip

1. Power Indicate: 0-100% SOC
2. Light's Definition:
   - Red light: "Battery alarm"-flash, "Battery protected or fault"-lights up
   - Green light: "Power on or working"-lights up, "Charging"-flash
   - Yellow light: "Lightboard communication error"
   - Lights off: "Battery low voltage protection"



Red light



Green light



Yellow light



Lights off

6. Installation and configuration

6.1 Packing

a. After receiving the battery, open the box to check the battery surface if get any broken, cracks or other bad phenomena; if get that, please do not install, and need to contact the supplier, and wait for the supplier's reply before proceeding to the next step.

b. Please ensure that the following items are included in the packaging:



Battery*1



Fixed bracket*2



Expansion bolts*2



M8*12mm
combination screws*4



Inverter
communication cable*1



Parallel
communication cable*1



Positive and negative cable
100cm 35mm2(optional)



Upper system
communication cable*1



M4*12mm screws*4

6.2 Recommended Tools

Before installing the battery pack, the user needs to have the tools as following list:

Picture	Item	Description
	Hammer Drill	Drill holes on the wall
	Impact Wrench Set	Locking expansion bolts
	Electric Screwdriver	Wiring
	Adjustable wrench	Loosening/tightening screws
	Crimping Tool	Crimping tool for RJ45 terminal
	Crimping Plier	Crimping tool for insulated electric connectors

7. Connection

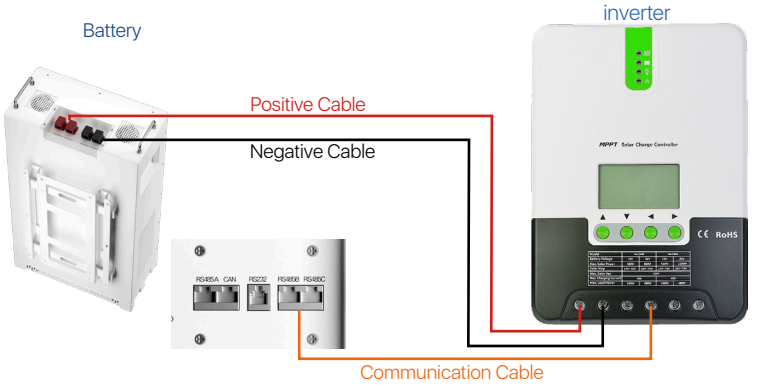
7.1 Precautions Before Connecting The Inverter

a. Use a multi-meter to measure whether connection of the positive and negative cables are conducting, and check whether that connections are loose.

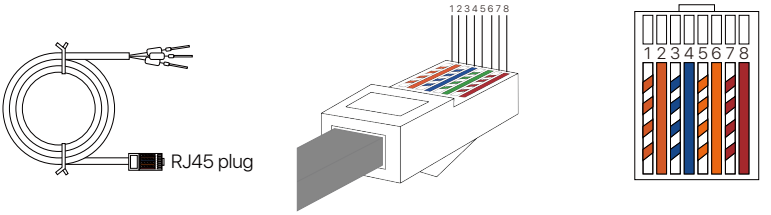
b. The battery should be switched off before wiring to ensure that there is no DC output from the battery.

c. Connect positive terminals of the battery and the inverter with red power cable, and then connect negative terminals of both sides with black power cable.

d. Connect both communication ports of the battery(RS485A/CAN) and the inverter(BMS port) with the communication cable, BMS ports of inverter have different definitions for some brands, please check the inverter manual.

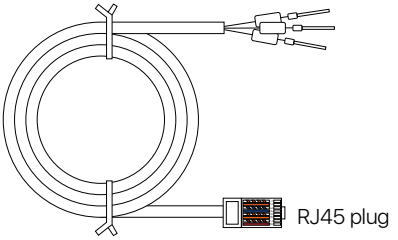


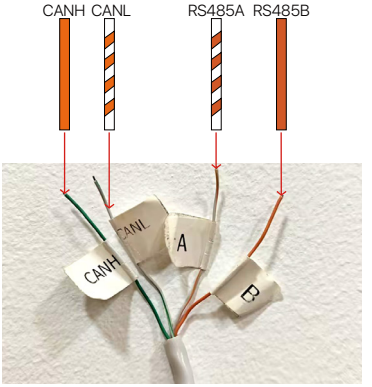
Communication cable connection Pin definition is as follows:



RS485A Port	PIN	1	2	3	4	5	6	7	8
	Define	RS485-B	RS485-A	GND	NC	NC	GND	RS485-A	RS485-B
CAN Port	PIN	1	2	3	4	5	6	7	8
	Define	NC	NC	NC	CAN-H	CAN-L	NC	GND	NC

7.2 RJ45 Connector Diagrams of Inverter's port





RJ45 Connector Diagrams	Communication
 Brand： DEYE, Growatt, Goodwe, Solis	CANH->pin4 CANL->pin5
 Brand: Victron	CANH->pin7 CANL->pin8
 Brand: Pylon, Growatt	RS485B->pin1 RS485A->pin2
 Brand: Voltronic	RS485B->pin3 RS485A->pin5
Please set up the RJ45 connector according to the pin definition of the inverter	

7.3 Precautions Before Connecting The Inverter with The Battery Pack in Parallel

a. Use a multi-meter to measure whether connection of the positive and negative cables are conducting, and check whether that connections are loose.

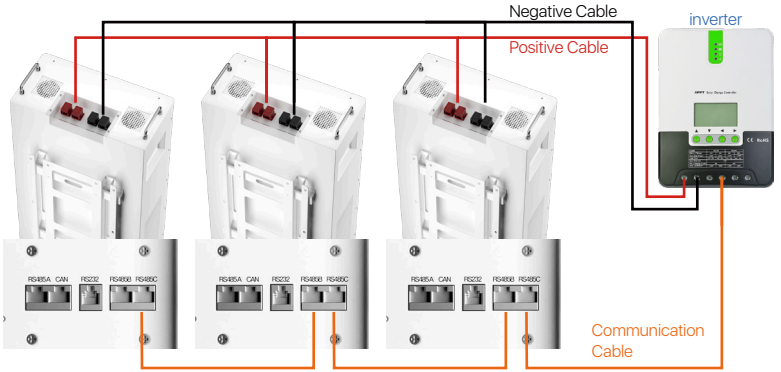
b. The battery should be switched off before wiring to ensure that there is no DC output from the battery.

c. Lock the parallel cable wires to the positive terminal of the battery pack first, then connect another end to the negative terminal.

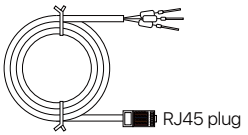
d. Parallel communication cable to the RS485 port of the battery pack.

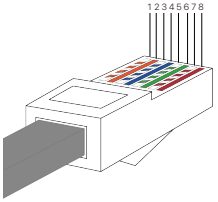
e. Connect positive terminals of the battery and the inverter with red power cable, and then connect negative terminals of both sides with black power cable.

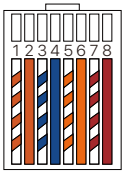
f. Connect both communication ports of the battery(RS485A/CAN) and the inverter(BMS port) with the communication cable, BMS ports of inverter have different definitions for some brands, please check the inverter manual.



Parallel communication cable connection Pin definition is as follows:



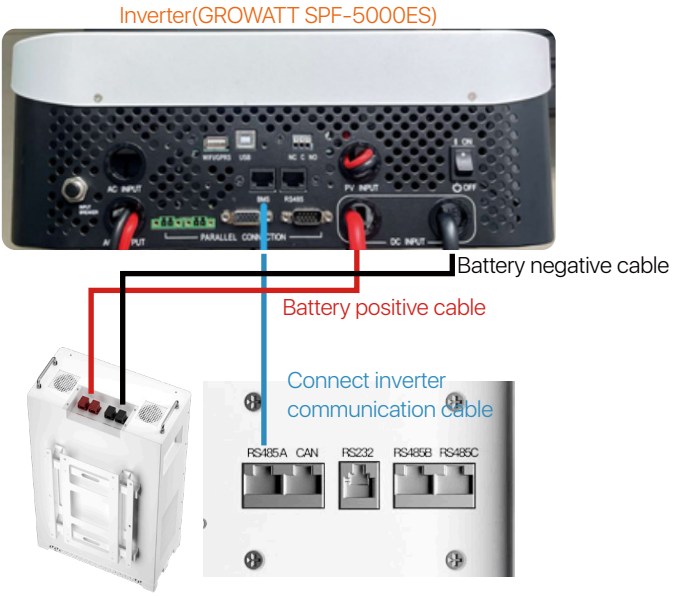




RS485 Parallel communication interface definition	PIN	1	2	3	4	5	6	7	8
	Define	RS485 -B	RS485 -A	GND	NC	NC	GND	RS485 -A	RS485 -B

7.4 Battery & Inverter Connection

Connect the positive and negative cables of the battery to the positive and negative terminals of the DC input of the inverter, insert the RJ45 crystal plug at one end of the distributed inverter communication cable to the RS485 of the battery, and connect the other end to the BMS terminal of the inverter according to the defined line voltage, and then connect the battery to the inverter.



7.5 Dip Code Switch Definition and Setting

ADD switch is a 4-bit DIP switch to manually distribute the communication address of parallel batteries.

The BMS will only recognize the DIP address once it is reset, so please reset the BMS when the DIP address is changed (the BMS must be reset in the standby state). When the DIP address is 0, the battery is configured as the stand-alone working mode; when the DIP address is 1, the BMS is configured as the master working mode; when the DIP address is 2 to 6, the BMS is configured as the slave working mode.

Please refer to the table below to set the DIP switch for parallel connection of different batteries.

4-BIT					
Address	Dip Switch Position				Illustration
	#1	#2	#3	#4	
0	OFF	OFF	OFF	OFF	
1	ON	OFF	OFF	OFF	
2	OFF	ON	OFF	OFF	
3	ON	ON	OFF	OFF	
4	OFF	OFF	ON	OFF	
5	ON	OFF	ON	OFF	
6	OFF	ON	ON	OFF	
7	ON	ON	ON	OFF	
8	OFF	OFF	OFF	ON	
9	ON	OFF	OFF	ON	
10	OFF	ON	OFF	ON	
11	ON	ON	OFF	ON	
12	OFF	OFF	ON	ON	
13	ON	OFF	ON	ON	
14	OFF	ON	ON	ON	
15	ON	ON	ON	ON	

8. Operation

8.1 Check Before Power on

a. Check all positive, negative cables and communication lines are connected correctly and safely.

b. Check the battery is firmly installed, easy to operate and maintain, and check ventilation.

c. Insulate the unused ports.

8.2 Power on

a. Turn on the switch on the battery.

b. The green running LED is normal on(Check the status of the LED indicators)

c. If it is failed to switch on the battery system, check if all the electrical connection is correct.

d. If the electrical connection is correct, but the battery system is still unable to switch on, contact our after-sale service within 48 hours

LED Indicator Status

Status	Charging					
Capacity Indicator	L1●	L2●	L3●	L4●	L5●	L6●
0～16.6%	Light	OFF	OFF	OFF	OFF	OFF
16.6～33.2%	Light	Light	OFF	OFF	OFF	OFF
33.2～49.8%	Light	Light	Light	OFF	OFF	OFF
49.8～66.4%	Light	Light	Light	Light	OFF	OFF
66.4～83.0%	Light	Light	Light	Light	Light	OFF
83.0～100%	Light	Light	Light	Light	Light	Light

Status	Discharge					
Capacity Indicator	L1●	L2●	L3●	L4●	L5●	L6●
0～16.6%	Light	OFF	OFF	OFF	OFF	OFF
16.6～33.2%	Light	Light	OFF	OFF	OFF	OFF
33.2～49.8%	Light	Light	Light	OFF	OFF	OFF
49.8～66.4%	Light	Light	Light	Light	OFF	OFF
66.4～83.0%	Light	Light	Light	Light	Light	OFF
83.0～100%	Light	Light	Light	Light	Light	Light

Flashing Definition

Item	Light	OFF
Flash 1	0.25 s	3.75 s
Flash 2	0.5 s	0.5 s
Flash 3	0.5 s	1.5 s

LED Flashing Faulty Please turn to the next page

Status	Normal/warning/ protection	RUN	ALM	Battery capacity LED	Specification
		●	●	● ● ● ● ● ●	
Power off	Sleep	OFF	OFF	ALL OFF	
Stand by	Normal	Flash1	OFF	Display according to the actual SOC	
	Warning	Flash1	OFF		
Charging	Normal	Flash2	OFF		
	Warning (Not including temperature)	Flash2	OFF		
	Over charging protection	Flash1	OFF		ALM OFF when protected during over charging
	Over Temperature, Low-temperature, Over current protection	Flash1	Flash2		
	Limited charging	Light	OFF		
Discharging	Normal	Light	OFF		
	Warning	Light	Flash3		ALM OFF when discharge over current
	Over discharge Protection	Flash1	OFF		ALM OFF when protected during over charging
	Over Temperature, Low-temperature 、Over current、 Shot Circuit、 Reverse Polarity Protection	Flash1	Flash2		
Invalidation	Error	OFF	Light	ALL OFF	Error refers to hardware defection such as BMS voltage sampling device,charging MOS damage, tempera ture sensor disconnection, etc.

9. Operation of Bluetooth

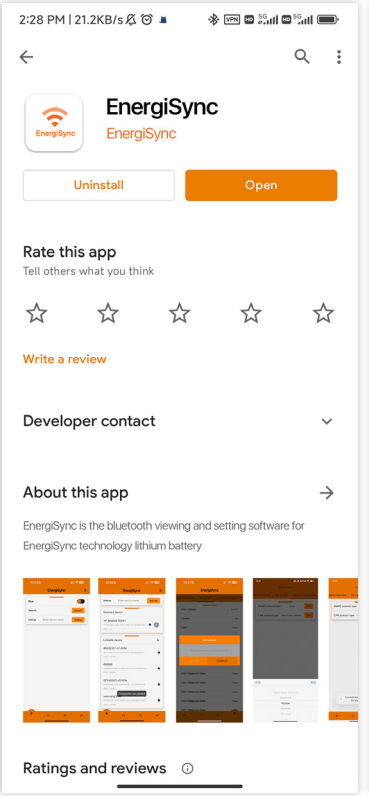
48V battery pack is equipped with a Bluetooth function, supports APP monitoring battery statuses. All information available in the battery, such as the state of charge, voltage, operating current, temperature, and other operating information are transmitted in real-time via the Bluetooth transmitter. The parameters can be made visible with the EnergiSync App.

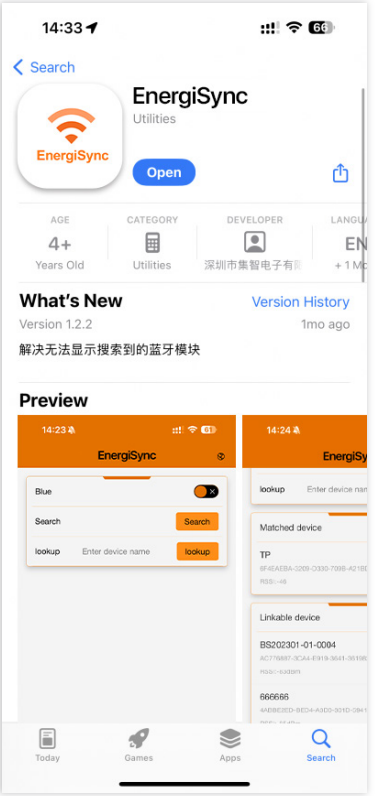
Download: Android: "EnergiSync" in Play Store

iOS: "EnergiSync" in Apple Store

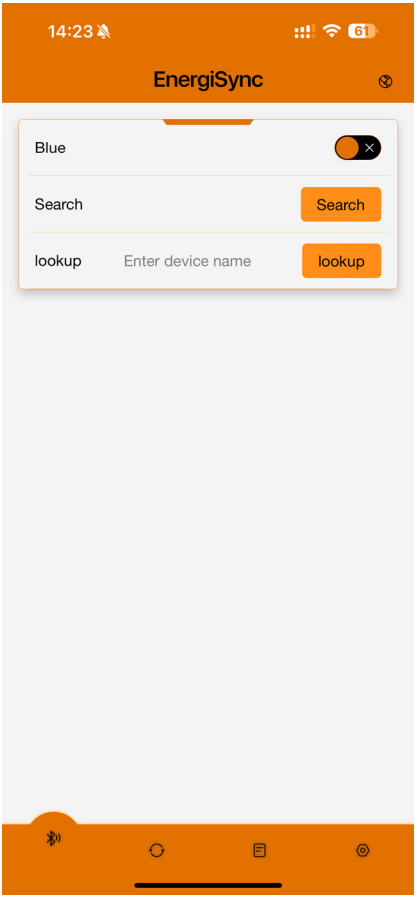
9.1 Bluetooth

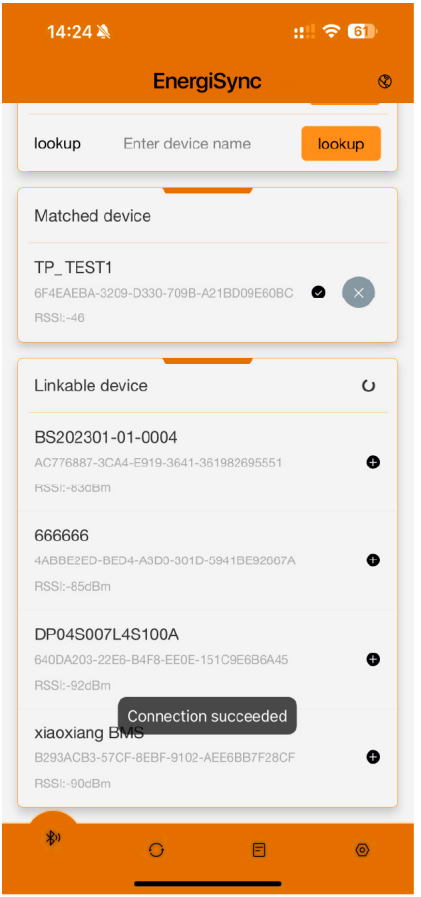
a. For Android users, please visit the Google Play Store and search for 'EnergiSync'. For iOS users, go to the Apple Store and look up 'EnergiSync'.





b. Turn on Bluetooth and search for the corresponding product's Bluetooth code



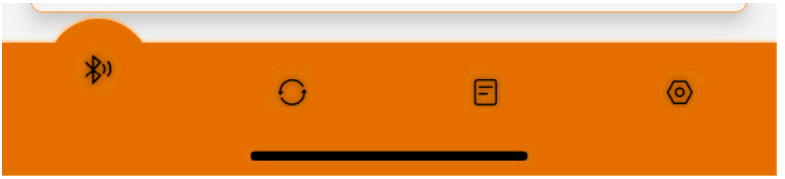


NOTE:

1.If you selected a battery to connect to and the app doesn't confirm the connection, it might be someone else is already connected to the battery. Only one device connects to the battery at the same time.

2.The Bluetooth app supports status monitoring only. It does not support any modified operation except communication protocol switching

c. Menu



Bluetooth list: Check the Device list and connect it.

Homepage: Check the status of battery-SOC, Volt, Current, Temperature, etc.

Historical Data: Not available

Setting: Base Message: Check the pack voltage, current, cycle time, etc.

Cell Voltage: Check the cells voltage.

Language: English/Chinese switching.

Fault Data: Not available

System Parameter: Not available

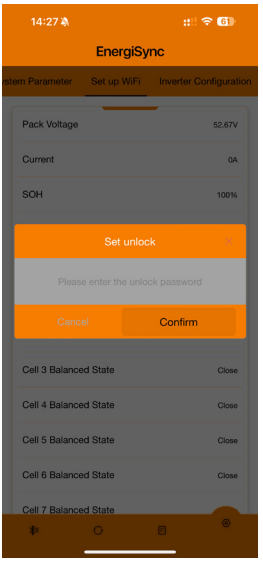
Set up WiFi: Setup WiFi function(Not available)

Inverter configuration: Communication protocol switching(Chapter 9.2)

9.2. Operation of Communication Protocol Switch(Via Bluetooth App)

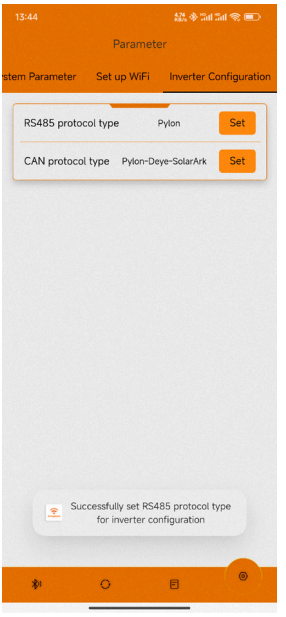
a. Connect to the Bluetooth app first(Chapter 9.1)

b. Swipe left to find 'Inverter Configuration'. Set unlock code is 888888



c. Choose the communication protocol and set, the battery pack will be restart after few second with "bee" sound. Then set up is successful.





10. Operation of Upper System

48V battery pack s upports to connect with our upper system to monitor the status of the battery and modify the communication protocol, please contact our sales representative or visit our website to get the latest upper system software.

10.1 Log in

a. The upper system communication cable connects to the RS485 port on the battery and then to the USB port on the PC/Laptop

b. Download and open the upper system software

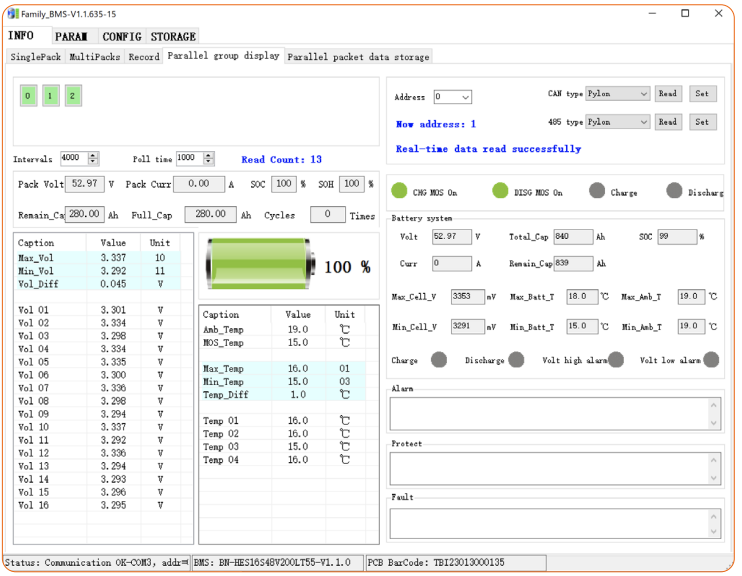
c. Modify the language

d. Updated the status of battery automatically

Notice: If it is failed to connect to the upper system, check if all the connection is correct. If the connection is correct, but the upper system is still unable to work, please contact our after-sale service



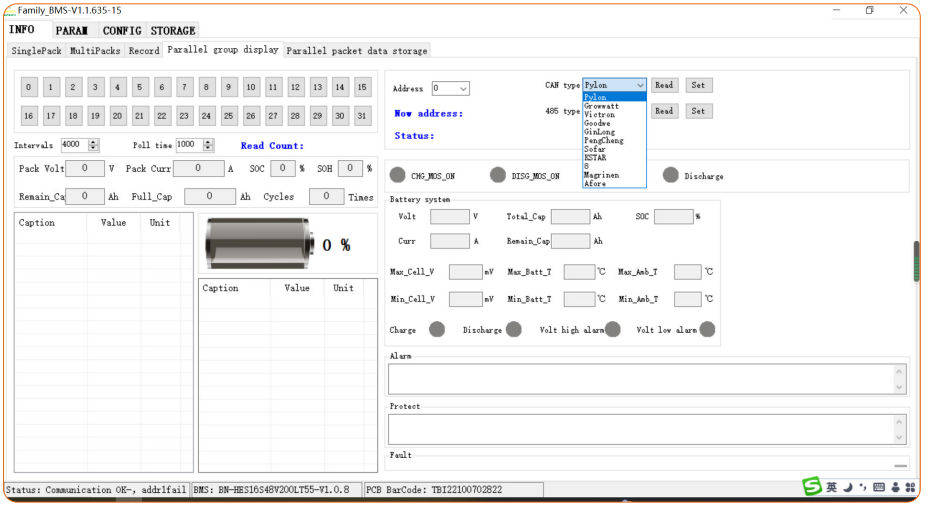




10.2 Switching communication protocols via PC

Connect to the upper system and follow the path:

INFO—Parallel Group Display—CAN Type/RS485 Type—Read—Choose the protocol—Set



10.3 Communication Compatible List

BMS Inverter Communication Protocol Matching Table						
Inverter Brand		Communication method	Protocol Name	Protocol Remarks	Communication Potter rate	Interface Definition
维克托-Victron	victron energy	CAN	Victron-CAN-V1.00- 211135	Active Upload	500K	7H、8L
古瑞瓦特-SPF Growatt-SPF	Growatt	485	Growatt BMS-RS485-protocal-1xSxxP_ ESSL _V2.01 Growatt BMS-RS485-protocal-V2.0	MODBUS Standard protocols	9600	1B、2A
古瑞瓦特-SPF Growatt-SPF	Growatt	CAN	Growatt BMS CAN-Bus-protocol-low-voltage-V1.05	Active Upload	500K	4H、5L
古瑞瓦特-SPH Growatt- SPF	Growatt	CAN	Growatt BMS communication protocol of growatt low voltage-V1.01	Active Upload	500K	4H、5L
德业 Deye	Deye 德业	CAN	Deye LV-CAN communication protocol	Active Upload	500K	4H、5L
德业 Deye	Deye 德业	485	485 Modbus Protocol(4)-deye	MODBUS protocols	9600	1B、2A
尚科-Scolar	SACOLAR	CAN	Growatt BMS CAN-Bus-protocol-low-voltage-V1.05	Active Upload	500K	4H、5L
固德威-Goodwe	GOODWE	CAN	Goodwe-CAN-V1.7-220228-SolarinverterFamily-EN	Active Upload	500K	4H、5L
日月元-Voltronic Power	Voltronic Power	485	Voltronic Power-485-V1.03-200325	MODBUS protocols	9600	3B、5A
首航-SOFAR	SOFAR	CAN	SOFAR-CAN-V1.00-211117-Rev6	Active Upload	500K	1H、2L
锦浪-Solis	solis	CAN	Solis-CAN-V1.0-191228-lowVoltage	Active Upload	500K	4H、5L
鹏城-Luxpower	LUXPOWER TEK	CAN	Luxpowertek Battery CAN Protocol -2021	Active Upload	500K	4H、3L
派能-Pylontech	PYLONTECH	485	Pylon-485-V3.5-161216-low voltage protocol	1363	115200	1B、2A
派能-Pylontech	PYLONTECH	485	Pylon-485-V3.5-161216-low voltage protocol	1363	9600	1B、2A
派能-Pylontech	PYLONTECH	CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
硕日-Srne	SRNE	485	shuori BMS Modbus Protocol for RS485 V1.3(2020-11-24)	MODBUS	9600	7A、8B
美世乐 Must	MUST美世乐	CAN	PV1800F-CAN communication Protocol1.04.04	Active Upload	100K	6H、5L
艾思玛 SMA	SMA	CAN	SMA-CAN-V1.0.0-210630-FSS -ConnectingBat-TI-en-20W	Active Upload	500K	4H、5L
阳光电源 SUNGROW	SUNGROW	CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
爱士惟 AiSWEI	AiSWEI	CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
英威腾 INVT	invt	CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
科士达 KSTAR	KSTAR	CAN	Kstar CAN_Protocol-V1.11	Active Upload	500K	4H、5L
艾伏 Afore	Afore	CAN	Afore Communication Protocol CAN Bus Version V1.02_20210104	Active Upload	500K	4H、5L
索瑞德-SOROTEC	SOROTEC	CAN	CAN Protocol 1.0(SOROTEC Protocol)	MODBUS Standard protocols	500K	4H、5L
索瑞德 SOROTEC	SOROTEC	485	Protocal between Sorotec Inverter and Lithium Battery (RS485)	Active Upload	500K	1B、2A
SOL-ARK	Sol-Ark	CAN	Sol-Ark CAN Bus Protocol V1.2.pdf4-25-22		500K	4H、5L
迈格瑞能 MEGAREVO	MEGAREVO	CAN	Shenzhen MEGAREVO Hybrid Inverter-5K BMS Protocol V1.01	Active Upload	500K	4H、5L
MPP Solar	MPP Solar	485	BMS 485 communication protocol 20200325(2)	MODBUS	9600	1B、2A
拓宝-TBB	TBB POWER	CAN	CAN BUS Protocol of TBB Lithium Battery BMS Platform V 1.1	Active Upload	500K	4H、5L
盛能杰-Senergy	Senergy 盛能杰	CAN	SenergyINV&BMS_ CAN_Protocols	Active Upload		4H、5L

11. Storage

a. External terminals of the battery pack are insulated and protected.

b. If the battery pack is stored for a long period of time without use, it is recommended that it be charged 30%-60%, and it is prohibited to store it completely uncharged.

c. Batteries that have been in storage for more than 3 months should be recharged for 2-3 hours at 0.2C~0.3C.

d. Batteries should be stored in a dry, clean, ventilated, non-corrosive gas environment, away from sources of ignition, to avoid exposure to the sun.

e. Do not store or put in high temperatures over 60°C for a long period of time, otherwise, it will cause function deterioration and life span reduction.

12. Warning

To prevent possible battery leakage, heat generation, and explosion, please observe the following warning:

Warning!

a. It is strictly forbidden to immerse the battery in seawater or water. When not in use, it should be placed in a cool and dry environment;

b. It is strictly forbidden to reverse the positive and negative poles to use the battery;

c. It is forbidden to use metal to directly connect the positive and negative electrodes of the battery to a short circuit;

d. It is forbidden to transport or store batteries together with metals, such as hairpins, necklaces, etc;

e. It is forbidden to knock or throw, step on the battery, etc.;

f. It is forbidden to directly weld the battery and pierce the battery with nails or other sharp objects.

Attention!

a. It is forbidden to use or place the battery under high temperatures (in the hot sun or in a very hot car), otherwise, it may cause the battery to overheat, catch fire or fail to function, and shorten its life; the recommended temperature for long-term battery storage is 10-45°C;

b. It is forbidden to throw batteries into fires or heaters to prevent fire, explosion, and environmental pollution. Scrapped batteries should be returned to the supplier or battery recycling point for disposal;

c. Do not use it in places with strong static electricity and strong magnetic fields, otherwise it will easily damage the battery safety protection device and bring unsafe hidden dangers;

d. If the battery leaks and the electrolyte enters the eyes, do not rub it. Immediately rinse the eyes with clean water and send them to the hospital for treatment, otherwise, the eyes will be hurt. If the battery emits and odor, heats up, discolors, deforms, or has any abnormality during use, storage, or charging, immediately remove the battery from the device or charger and stop using it;

e. It is forbidden to insert the positive and negative poles of the battery directly into the power socket, and a special charger for lithium-ion batteries must be used;

f. Check the battery voltage and connectors before installation, and use it only after everything is normal;

g. The battery is stored in half power. If the battery has not been used for three months, it needs to be recharged once;

h. If the electrode is dirty, it should be wiped with a dry cloth before use. Otherwise, it may cause poor contact and function failure;

In-Line Warranty Card

Warranty Coverage

This product is covered by a 10-year warranty from the date of purchase. During this period, In-Line will repair or replace any components found to be defective due to:

- Failure to charge/discharge normally
- BMS malfunction or internal component failure not caused by misuse
- Manufacturing defects or software malfunction under normal use

Warranty Exclusions

The warranty does not cover the following:

- Physical damage (e.g. dropping, impact, cracks)
- Water ingress, moisture, or corrosion
- Improper wiring, overvoltage, or overcurrent
- Use outside the specified temperature range
- Failure to follow user manual instructions
- Unauthorized disassembly, repair, or modification

How to Claim

1. Provide valid proof of purchase
2. Contact In-Line customer service to troubleshoot and confirm the issue
3. If the issue qualifies for warranty, repair or replacement will be arranged. In some cases, customers may be asked to return the product or defective components, subject to prior agreement.

Contact number: 9647769030537