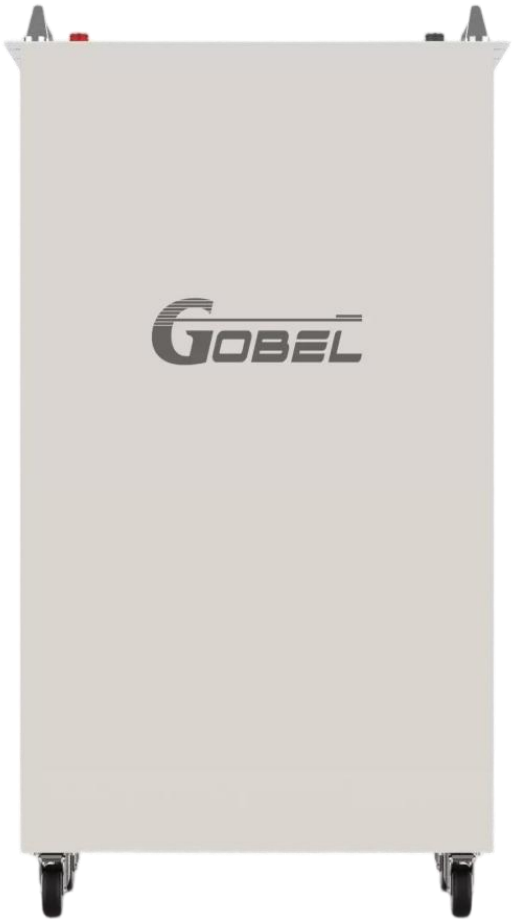
User manual

Lifepo4 Battery

GB-SR1-JK314



About this manual

This manual provides product information and offers guidelines for installation, operation, and maintenance. It does not contain all information regarding photovoltaic generation and energy storage hybrid systems.

How to use this manual

Before performing any operations on the battery, please read this manual and related documents carefully.
Please keep this manual and related documents in a safe place for future reference.
As the product is updated and iterated, the content may be regularly updated and changed, and this manual may be modified without prior notice.
To obtain the latest version of the manual, please contact cs@gobelpower.com or visit https://www.gobelpower.com.

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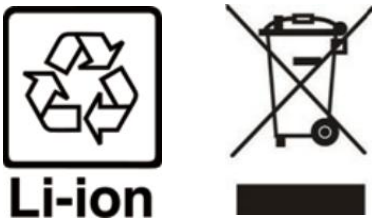
1. Safety precautions

Reminder

1) before installing or using the battery, be sure to read the accompanying user manual carefully. Failure to follow any instructions or warnings in this document may result in electric shock, serious injury or death, or damage to the battery, potentially rendering it unusable.
2) if the battery is stored for an extended period, it should be charged every six months, and the state of charge (soc) should not be below 50%.
3) the battery must be charged within 48 hours after complete discharge.
4) cables must not be exposed.
5) all battery terminals must be disconnected during maintenance.
6) if any abnormalities are detected, please contact the supplier within 24 hours.
7) cleaning solvents must not be used to clean the battery.
8) the battery must not be exposed to flammable or highly corrosive chemicals or their vapors.
9) no painting of any components of the battery (including internal or external components) is allowed.
10) the battery must not be directly connected to photovoltaic wires.
11) direct or indirect damage resulting from the above actions is not covered under warranty.
12) it is prohibited to insert any foreign objects into any part of the battery.



Warning

1.1. Before connection

1) after unpacking, please check the product and the packing list. If the product is damaged or parts are missing, contact your local dealer or visit **www.gobelpower.com**.
2) before installation, ensure that the grid power supply is disconnected and that the battery is in the off position.
3) wiring must be correct; do not reverse the positive and negative terminals, and ensure there are no short circuits with external devices.
4) it is strictly prohibited to connect the battery directly to an ac power source.

5) the battery system must be reliably grounded, with a grounding resistance of less than 1ω.
6) ensure that the electrical parameters of the battery system are compatible with the related equipment.
7) keep the battery away from water sources and fire sources.

1.2. Usage precautions

1) if the battery system needs to be moved or serviced, the power must be turned off and the battery must be completely shut down.
2) it is prohibited to connect different types of batteries together.
3) it is prohibited to use the battery with faulty or incompatible inverters.
4) disassembling the battery is prohibited.
5) in the event of a fire, only dry powder extinguishers may be used. Liquid extinguishers are prohibited.
6) do not open, repair, or disassemble the battery unless you are a GOBEL power employee or an authorized personnel of GOBEL power. We do not assume any consequences or related liabilities arising from violations of safety operations or breaches of design, production, and equipment safety standards.

TheGB-SR1-JK314 lithium iron phosphate battery is a new energy storage product developed and produced by gobel power, designed to provide reliable power support for various types of devices and systems. TheGB-SR1-JK314 is particularly suitable for high-power applications with limited installation space and long cycle life.

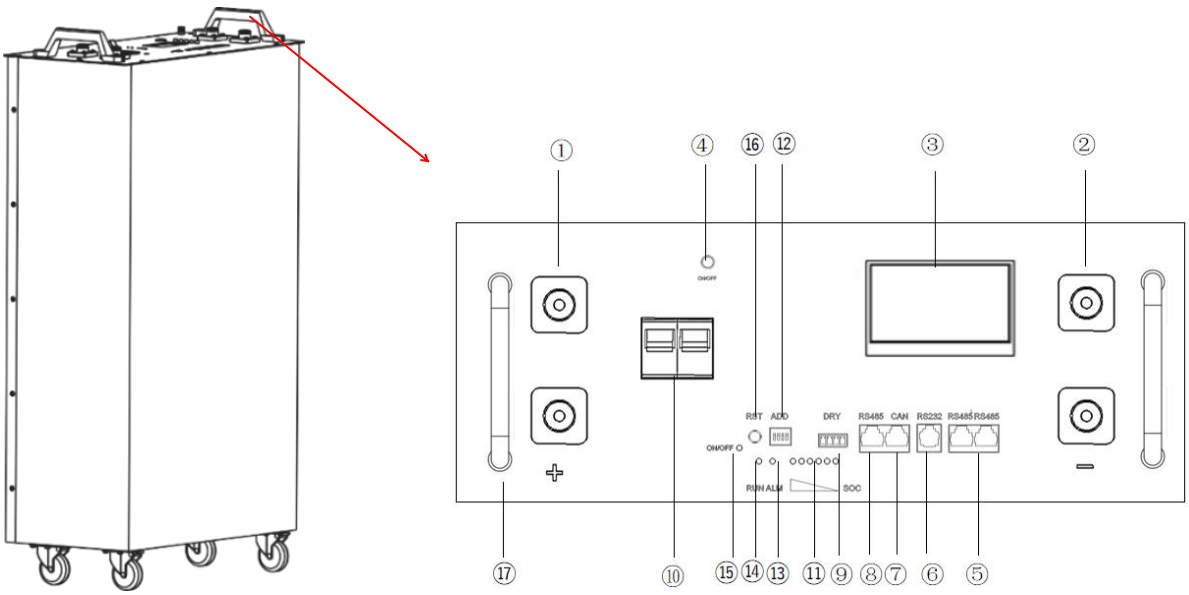
TheGB-SR1-JK314 features a built-in battery management system (BMS) that manages and monitors battery information, including voltage, current, and temperature. Additionally, the BMS can balance the charging and discharging of the battery to extend its cycle life. Multiple batteries can be connected in parallel to expand capacity and power, meeting the demands for greater capacity and longer power support duration.

1) the entire module is non-toxic, pollution-free, and environmentally friendly.
2) the positive electrode material is lifepo4, which offers safety performance and a long cycle life.
3) the battery management system (BMS) includes protection functions for over-discharge, over-charge, over-current, and high/low temperature.
4) the system can automatically manage the charging and discharging states and balance the current and voltage of each cell.
5) flexible configuration allows multiple battery modules to be connected in parallel to expand capacity and power.
6) utilizes a self-cooling mode to quickly reduce overall system noise.
7) the module has low self-discharge, allowing for storage of up to 6 months without charging, with no memory effect and excellent shallow charge/discharge performance.
8) high power density: Modular design for ground installation, saving installation space.

2. Product overview

This section provides a detailed description of the interface functions as well as the front and side panels.

2.1. Interface definition



①	Positive	⑩	Circuit breaker
②	Negative	⑪	(led) SOC
③	Lcd screen	⑫	Dip switch
④	on/off	⑬	(led) alarm
⑤	RS485B/ RS485C	⑭	(led) run
⑥	RS232	⑮	(led) on/off
⑦	CAN	⑯	Reset
⑧	RS485A	⑰	Handle
⑨	Dry contact		

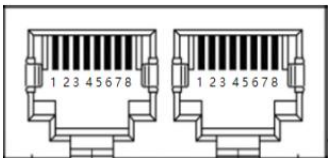
BMS Switch

Used to turn the BMS standby status of the entire battery on or off, with no power output.

RS485A CAN

Inverter communication port: RS485A or CAN, supports multiple inverter communication protocols for outputting battery information to the inverter.

RS485-- Uses 8P8CVertical RJ45 Socket		CAN-- Uses 8P8CVertical RJ45 Socket	
RJ45 pin	Definition description	RJ45 pin	Definition description
1 、8	RS485-B1	9、10、11、14、16	NC
2 、7	RS485-A1	12	CANL
3 、6	GND	13	CANH
4 、5	NC	15	GND

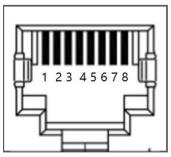


RS485B

Parallel communication port: RS485B connects to the "RS485C" port of the previous battery to enable communication between multiple parallel batteries.

Computer communication port: Connects to a computer via an RS485-USB cable, allowing for monitoring or modification of battery parameters.

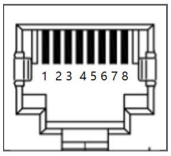
RS485-- Uses 8P8CVertical RJ45 Socket	
RJ45 pin	Definition description
1 、8	RS485-B2
2 、7	RS485-A2
3 、6	GND
4 、5	NC



RS485C

Parallel communication port: RS485C connects to the "RS485B" port of the preceding battery to enable communication between multiple parallel batteries.

RS485-- Uses 8P8CVertical RJ45 Socket	
RJ45 pin	Definition description
1 、8	RS485-B2
2 、7	RS485-A2
3 、6	GND
4 、5	NC



LED Status Indicator Description

SOC: Battery capacity indicator.

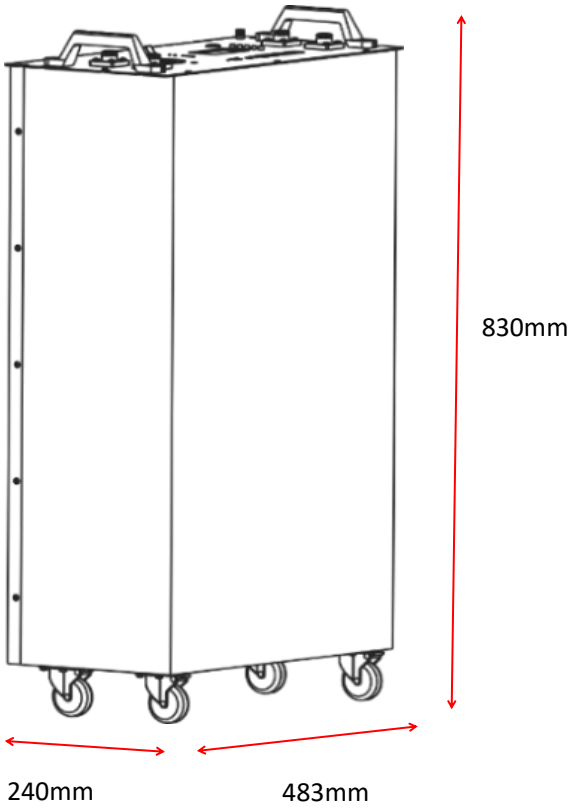
Power LED Description											
Status		Charging					Discharge				
Capacity Indicator Light		L5	L4	L3	L2	L1	L5	L4	L3	L2	L1
SOC	0~20%	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
	20~40%	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON
	40~60%	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON
	60~80%	OFF	ON	ON	ON	ON	OFF	ON	ON	ON	ON
	80~100%	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Note: ON indicates that the LED is on,OFF indicates that the LED is off											

BMS Functions

Protection and Alarm	Management and Monitoring
Charge/Discharge Termination	Intelligent Protection Mode
Charge Over voltage	Intelligent Charging Mode
Discharge Under voltage	Protection, Charge Current Limitation
Charge/Discharge Over current	Intelligent Protection Mode
High/Low Temperature (Battery/BMS)	Intelligent Protection Mode
Short Circuit	Protection

2.2. Product dimensions (unit: Mm)

L*W*H：483*240*830mm



2.3. Technical data

Main parameters		**GB-SR1-JK314**
Battery chemical composition		Lifepo4
Capacity (Ah)		314
Expandability		Up to 15 battery modules (maximum 241.15 kWh) in parallel
Rated voltage (V)		51.2
Operating voltage (V)		44~58.4
Energy (kWh)		16.08
Usable energy (kWh) [1]		14.47
Charge/discharge current (a)	Recommended[2]	100
	Maximum[2]	Discharge: 150/charge: 150
	Peak (25℃)	200
Other parameters		
Recommended depth of discharge		90%
Active balancing current (A)		2
Dimensions (W/D/H, mm)		483×240×830
Weight (kg)		125
Main led indicator		Led(soc:20%~soc100% operating status)
Enclosure ip rating		IP21
Operating temperature		Charging: 0～55℃ Discharging: -20℃~55℃
Storage temperature		0～35℃
Humidity		5%~95%
Altitude		≤3000m
Installation method		Floor-mounted
Communication ports		CAN、RS485、RS232
Certifications		UN38.3, MSDS

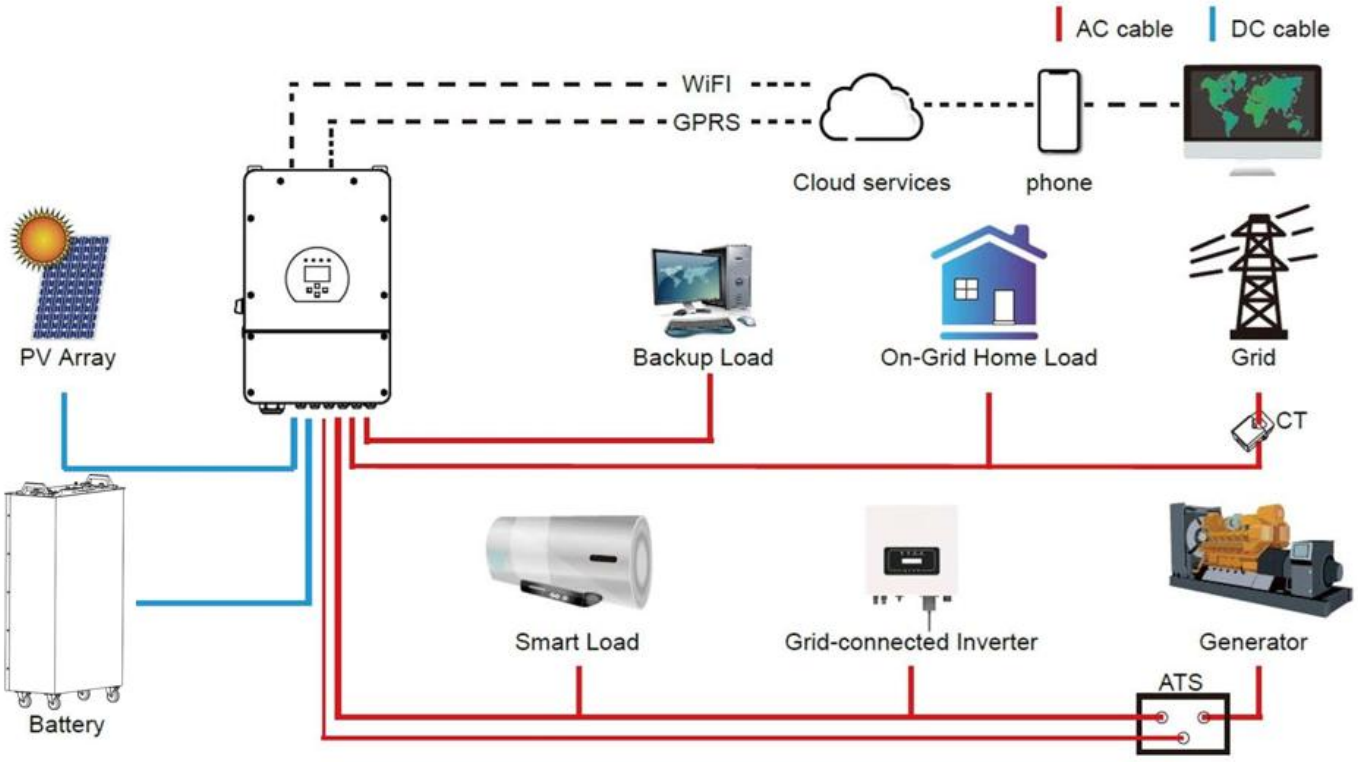
[1] usable energy in dc, testing conditions: 90% depth of discharge, 0.5c charging and discharging, temperature at 25°c. Usable energy may vary based on system configuration parameters.

[2] current is affected by temperature and state.

2.4. Product application solutions

The following illustrations demonstrate the basic applications of this battery.
It also includes the following devices to form a complete operating system:
- generator or grid
- photovoltaic modules
- hybrid inverter (charging and discharging)

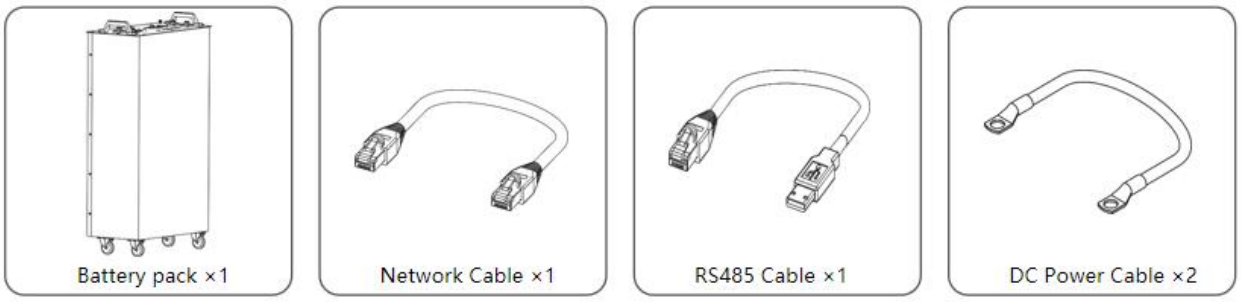
Please consult your system integrator for other possible system architectures based on your needs.



The images are for reference only; please refer to the actual product. The final interpretation rights belong to gobel power.

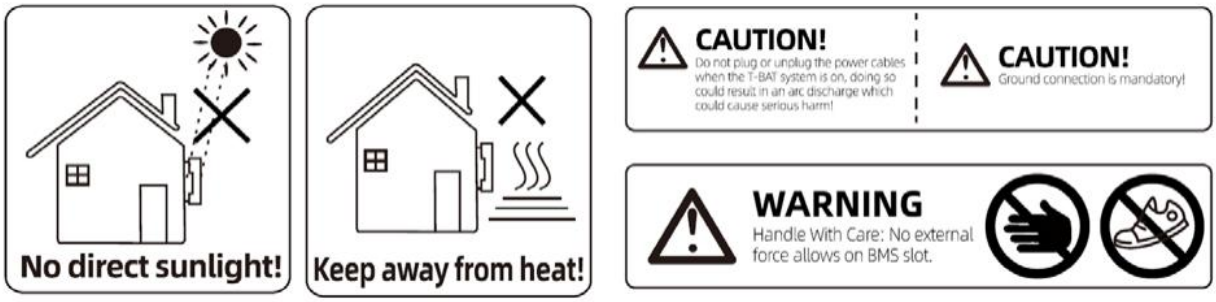
3. Bill of materials

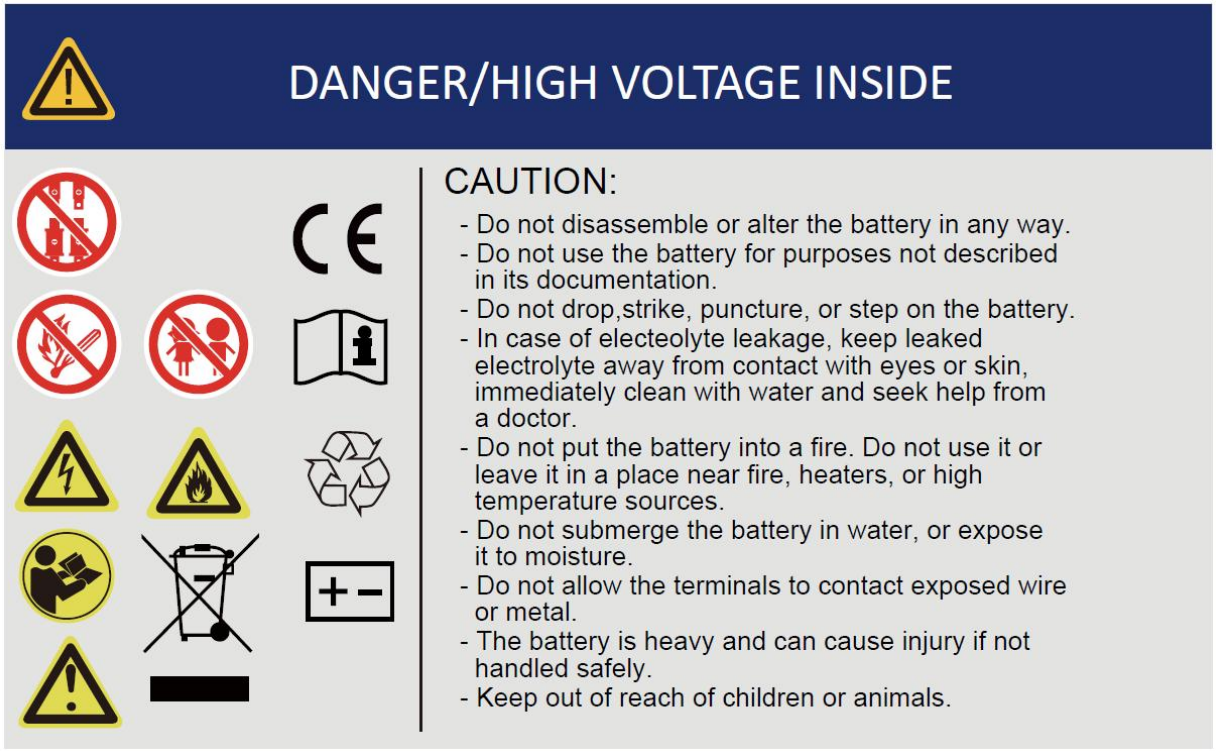
Check the equipment before installation. Ensure that there are no damaged items in the packaging.
You should have received the following items in the package.



4. Installation preparation

4.1. Symbol description





4.2. Tools

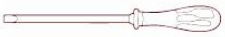
The tools required for installing the battery are as follows:

Torque Screwdriver

Phillips Screwdriver

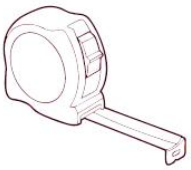
Hexagon Wrench

Phillips Screwdriver



Slotted Screwdriver

Torque Wrench



Tape Measure

Driller

Pencil or Marker

Notes:

Use appropriately insulated tools to prevent accidental electric shock or short circuits.

If insulated tools are not available, cover all exposed metal surfaces of the tools with electrical tape, except for the tips of the tools.

4.3. Safety equipment

When handling battery packs, it is recommended to wear the following safety equipment:

Safety gloves

Safety goggles

Safety shoes

5. Installation instructions

5.1. Installation precautions

Lithium batteries are designed for indoor use (ip21). Avoid direct exposure to sunlight, rain, and snow during installation and operation.

Ensure that the installation location meets the following conditions:

- Not in direct sunlight.
- Not in areas where flammable materials are stored at height.
- Not in potential explosion areas.
- Not in places where cold air is directly blowing.
- Altitude does not exceed approximately 3000 meters.
- Not in environments with precipitation or high humidity (>95%).

5.2. Installation location

Ensure that the installation location meets the following conditions:

- The area is completely waterproof.
- The wall surface is flat and level.
- There are no flammable or explosive materials.
- The environmental temperature is within the range of -20°c to 50°c.
- Temperature and humidity are maintained at constant levels.
- The area has minimal dust and dirt.
- The distance from heat sources is more than 2 meters.
- The distance from the inverter's exhaust outlet is more than 0.5 meters.
- Do not cover or wrap the battery casing.
- Do not place in areas accessible to children or pets.
- The battery module does not have forced ventilation requirements, but installation in enclosed areas should be avoided. Ventilation should avoid high salinity, high humidity, or high-temperature environments.

Caution

If the environmental temperature exceeds the operational range, the battery pack will stop working to protect itself.

The optimal operating temperature range for the battery pack is 15°c to 35°c. Frequent exposure to extreme temperatures may reduce the performance and lifespan of the battery pack.

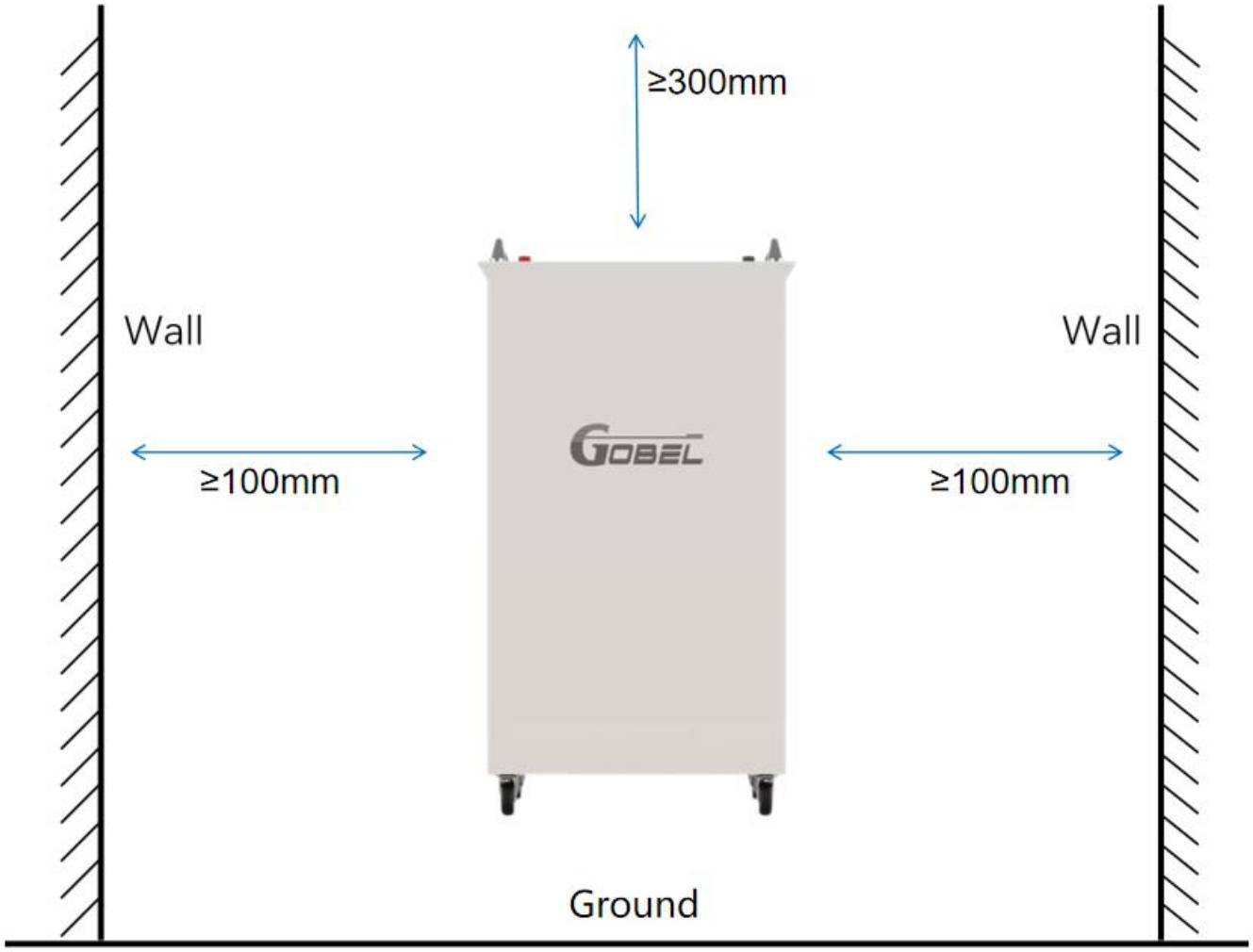
5.3. Installing the battery

Caution

Please remember that this battery is heavy! Handle with care when removing it from the packaging.

5.3.1 ground installation method

a) During installation, sufficient space should be left around the battery module to ensure adequate installation and heat dissipation space.



b) The gear on the rotating wheel can lock or unlock the product.

5.4. Parallel battery connection

5.4.1 single battery connection (applicable for inverter power ≤ 10kw)

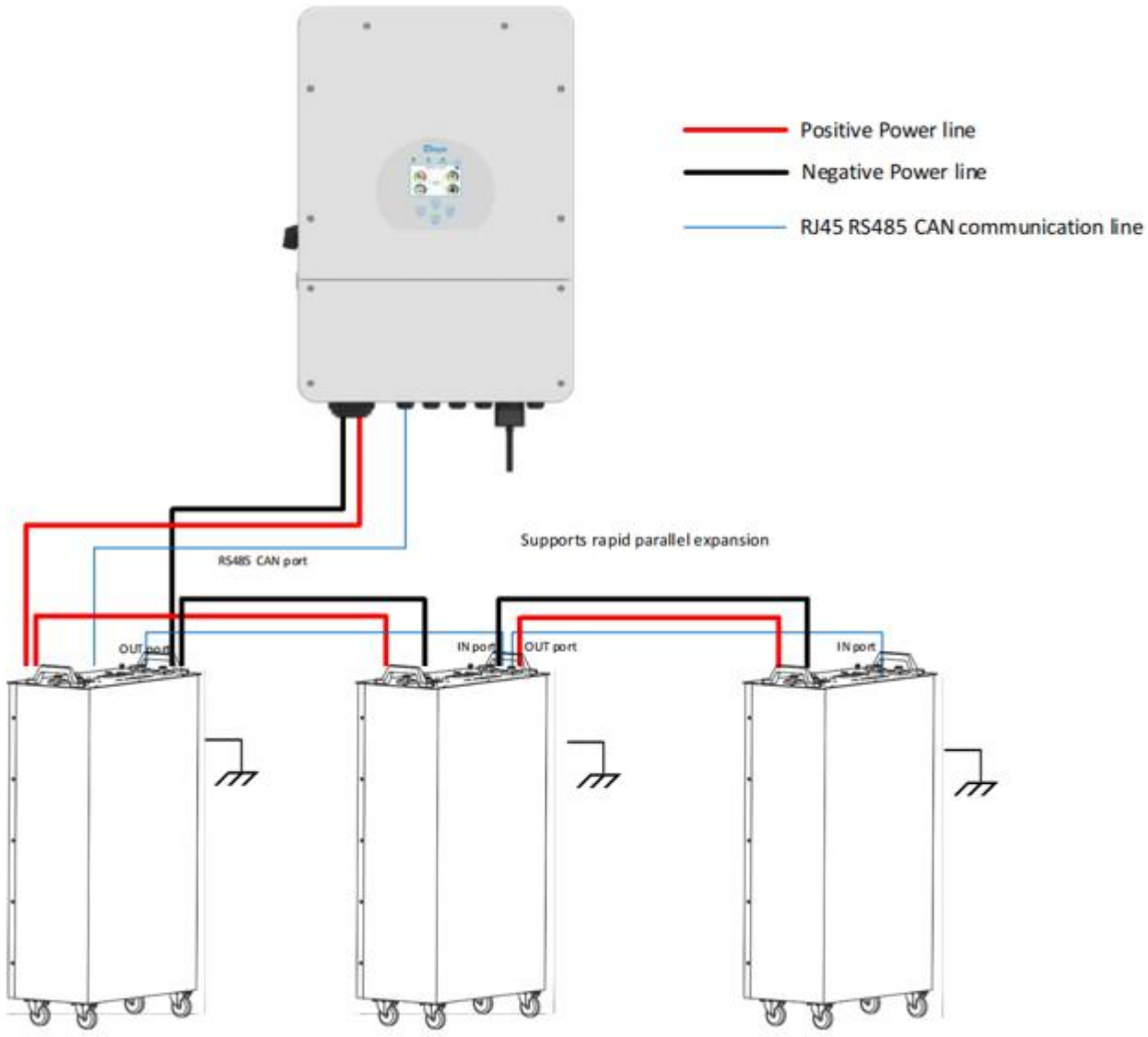
Caution

It is important to note that the maximum current supported by the battery terminals is 200A (the inverter operating power must not exceed 10kw), exceeding 200A may cause the connectors and cables to overheat, potentially leading to fire hazards.
If the inverter's operating power exceeds 10kw, multiple batteries must be connected in parallel with multiple inverters.

Single battery connection is suitable for scenarios where the inverter operating power is < 10kw.

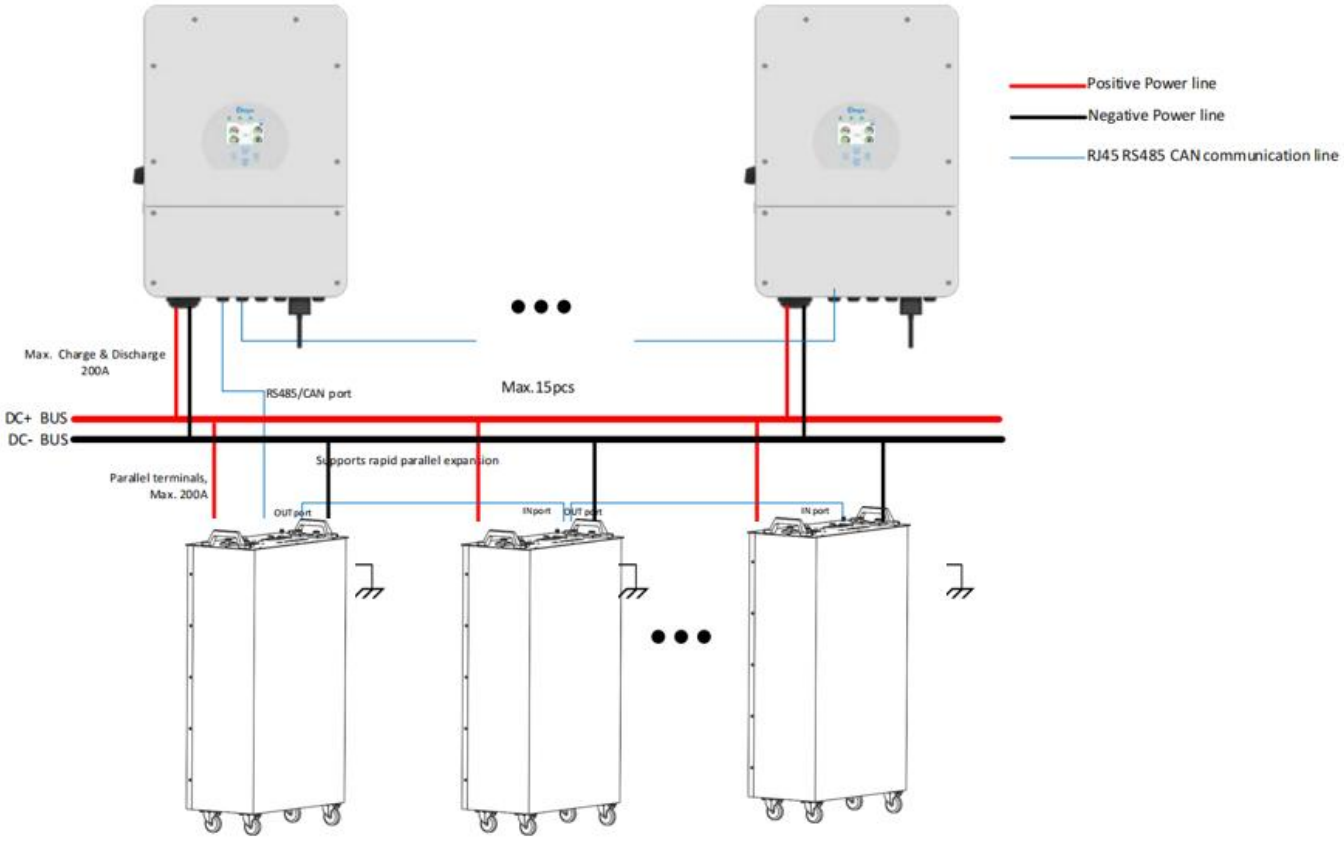
5.4.2 parallel mode 1 (applicable for inverter operating power < 10kw)

Schematic diagram of multiple batteries connected in parallel.



5.4.3 parallel mode 2 (applicable for inverter power > 10kw)

Multiple batteries connected in parallel with multiple inverters (one or more inverters can be connected in parallel).



5.5. Visual inspection of connections

After connecting the batteries, check the following:

- Usage of positive and negative cables.
- Connection status of positive and negative terminals.
- Status of battery dip switches.
- Tightness of all bolts.
- Condition and appearance of the cables.
- Installation status of protective covers.

5.6. Product startup

A. Install theGB-SR1-JK314 battery in the ground position as described in section 5.3.

B. Connect the wires according to the images in section 5.4.

C. Turn on the power for all batteries in sequence.

Starting the battery:

After installation, wiring, and configuration are completed, all connections must be checked. Once the connections are confirmed to be correct, first turn on the circuit breaker, then press the BMS power on/off button to activate the battery. The green working indicator light on the side panel of the battery will flash, indicating that the battery system is operating normally.

6. Inspection, maintenance, and storage

6.1. General information

- It is recommended to complete the installation within 3 months after the battery product is delivered if it is not fully charged.
- During maintenance, do not reinstall the battery into the battery product, as this may reduce battery performance.
- Do not disassemble any batteries within the battery product; dissection of the battery is prohibited.
- After excessive discharge, it is recommended to charge the battery within 48 hours.
- The battery product can also be charged in parallel. After parallel connection, the charger should only connect to the total positive and negative output ports of the system.
- Never attempt to open or disassemble the battery! There are no serviceable parts inside the battery.
- Disconnect the lithium-ion battery from all loads and charging devices before performing cleaning and maintenance activities.
- Place the included protective cover on the terminals before cleaning and maintenance activities to avoid the risk of terminal contact.

6.2. Inspection

- Check for loose and/or damaged wires and contact points, cracks, deformation, leaks, or any other form of damage.
- If battery damage is found, it must be replaced. Do not attempt to charge or use a damaged battery. Do not touch the liquid from a ruptured battery.
- Regularly check the charging status of the battery. Lithium iron phosphate batteries will slowly self-discharge when not in use or stored.
- Consider replacing the battery if any of the following conditions are noted:
- The battery runtime drops below 70% of the original runtime.
- The battery charging time significantly increases.

6.3. Maintenance

- Lithium-ion batteries require no maintenance, charge at least once every six months to maintain the battery capacity at about 80% or more.
- If necessary, use a soft, dry cloth to clean the lithium-ion battery.
- Never use liquids, solvents, or abrasives to clean the lithium-ion battery.

6.4. Storage

- The battery product should be stored in a dry, cool environment.
- Generally, the maximum storage period at room temperature is 6 months. If the battery is stored for more than 6 months, it is recommended to check the battery voltage. If the voltage is above 51.2v, the battery can continue to be stored. If the battery voltage is below 51.2v, it must be charged according to the charging strategy.
- The charging strategy is as follows: Discharge the battery to the cutoff voltage, use a current of 0.2c (62.8a), and then charge with a current of 0.2c (62.8a) for about 3 hours. Maintain the battery's state of charge (soc) between 40%-60% during storage.
- When storing battery products, avoid sources of fire or high temperatures, and keep them away from explosive and flammable areas.

7. Troubleshooting

To determine the status of the battery system, users must use additional battery status monitoring software to check the protection mode. For information on using the monitoring software, refer to the installation manual. For understanding the protection mode, refer to the following sections for solutions.

Fault type	Fault condition	Possible causes	Troubleshooting
BMS fault	Battery voltage sampling circuit fault	Loose connection at battery voltage sampling terminal	Re-tighten screws or replace terminal
		The battery voltage acquisition line is disconnected	Replace sampling line
	Battery temperature sampling circuit fault	Loose connection at battery temperature sensor	Re-tighten screws
		Faulty battery temperature sensor	Replace sampling line
Electrochemical battery fault	Low battery voltage or high internal resistance	Battery damaged by external factors, resulting in short circuit, puncture, or crushing	Replace battery cell
Over voltage protection	Battery voltage exceeds 3.65 v during charging Battery voltage exceeds 58.4 v	BMS parameter setting error	Change setting parameters
		Battery voltage sampling terminal connection is loose	Re-tighten screws or replace terminals
Under-voltage protection	Battery voltage below 40 v Minimum cell voltage below 2.5 v	BMS parameter setting error	Change setting parameters
		Loose connection at battery voltage sampling terminal	Re-tighten screws or replace terminal
		Battery over-discharged below 2.5 v after long-term storage	Charge and balance
		Abnormal self-discharge of a single cell	Replace the cell
Charge and discharge high-temperature protection	Maximum cell temperature exceeds 60°c	Battery environmental temperature too high Presence of abnormal heat sources	Reduce environmental temperature
		Loose connections	Re-tighten screws
		Cell failure	Replace the cell
		Battery temperature sensor failure	Replace sampling line
Charging low-temperature protection	Minimum cell temperature below 0°c	Battery environment temperature too low	Increase ambient temperature
Discharge low-temperature protection	Minimum cell temperature below -20°c	Battery environment temperature too low	Increase ambient temperature

By reviewing the above data and sending it to the service personnel of our company, the personnel will respond with the corresponding solution after receiving the data.

8. Battery recycling

Through advanced hydrometallurgical processes, metals such as aluminum, copper, lithium, and iron are recovered from discarded lifepo4 batteries, with an overall recovery efficiency of up to 80%. The specific process steps are as follows:

8.1. Recovery process and steps for cathode materials

- Aluminum foil, as a collector, is an amphoteric metal. First, it is dissolved in naoh alkaline solution, allowing aluminum to enter the solution in the form of naalo2. After filtration, the filtrate is neutralized with sulfuric acid solution, resulting in the precipitation of al(oh)3. When the ph exceeds 9.0, most of the aluminum precipitates, and the obtained al(oh)3 can reach a level of chemical purity after analysis.
- The filter residue is dissolved with sulfuric acid and hydrogen peroxide, allowing lithium iron phosphate to enter the solution in the form of fe2(so4)3 and li2so4, separating from the carbon black and carbon on the surface of lithium iron phosphate. After filtration and separation, the ph of the filtrate is adjusted with naoh and ammonia water. First, iron is precipitated using fe(oh)3, and the remaining solution is precipitated with saturated na2co3 solution at 90°c.
- Since fepo4 slightly dissolves in nitric acid, the filter residue is dissolved with nitric acid and hydrogen peroxide, directly precipitating fepo4, separating impurities such as carbon black from the acid solution, and leaching fe(oh)3 from the filter residue. Finally, li2co3 is precipitated using saturated na2co3 solution at 90°c.

8.2. Recovery of anode materials

The recovery process for anode materials is relatively simple. After the separation of the anode plates, the purity of copper can exceed 99%, which can be used for further refining into electrolytic copper.

8.3. Recovery of separators

Separator materials are primarily harmless and have no recovery value.

8.4. List of recycling equipment

Automatic disassembly machines, crushers, hydrometallurgical gold pools, etc.

9. Transportation requirements

Battery products should be transported after packaging, and during transportation, severe vibration, impact, or compression should be prevented, as well as direct sunlight and rain exposure. Vehicles such as cars, trains, and ships can be used for transportation.

Before transporting lithium iron phosphate batteries, all applicable local, national, and international regulations should always be checked.

The transportation of discarded, damaged, or recalled batteries may be subject to special restrictions or prohibitions in certain cases.

The transportation of lithium-ion batteries falls under the dangerous category un3480, class 9. For water, air, and land transportation, the batteries belong to packaging group pi965, part 1.

The transportation of lithium-ion batteries assigned to class 9 requires the use of class 9 miscellaneous dangerous goods and un identification labels. Please refer to the relevant transportation documents.

Class 9 miscellaneous dangerous goods and un identification labels.

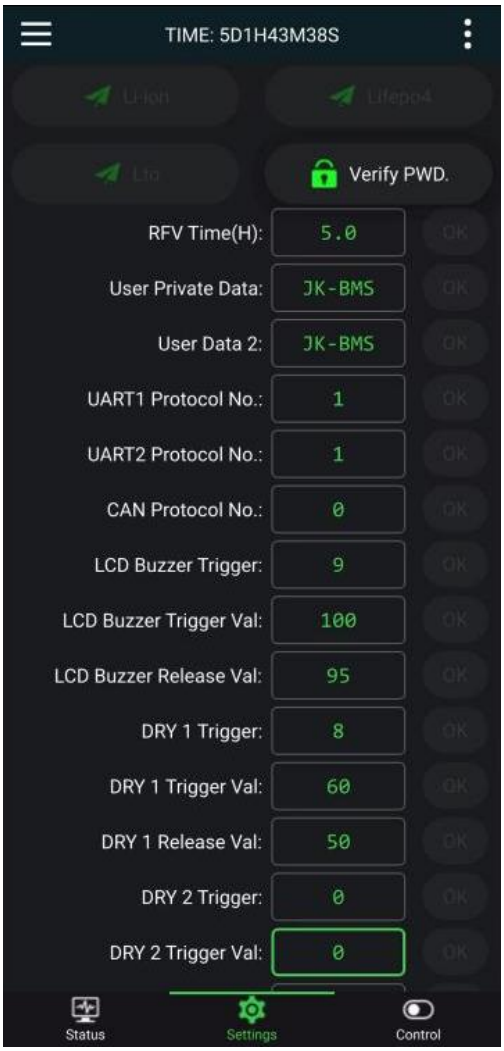
Appendix:

1. Meaning of Abbreviations

BMS	Battery Management System
RJ45	Registered Jack 45
SOC	State Of Charge
C	Charge C-rate
RS485	RS485 Communication Interface
CAN	Controller Area Network
GP-SR1-JK314	Battery Module

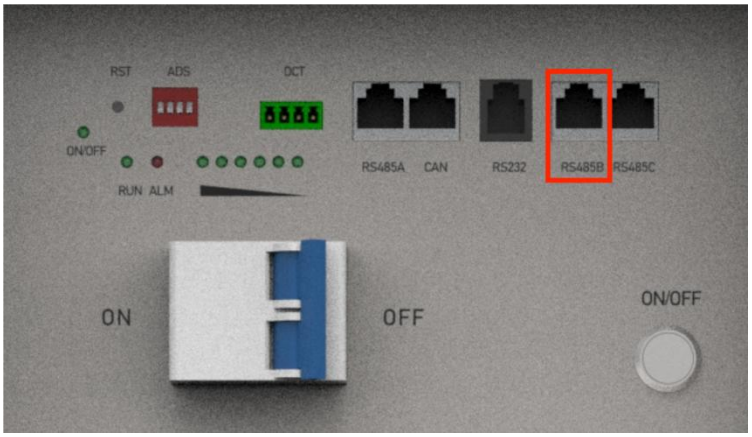
2. Mobile Software Operating Instructions

Download the "JK-BMS" APP on your mobile phone to view battery information. The default password is: 123456.
Android APP download link:
https://play.google.com/store/apps/details?id=com.jktech.bms
iPhone APP download link:
https://iphone.apkpure.com/app/%E6%9E%81%E7%A9%BAbms/com.jktech.bms



3. Computer Software Operating Instructions

1) Connect one end of the USB-RS485 adapter cable to the RS485B port of the GP-SR1-JK314 and the USB end to the computer.

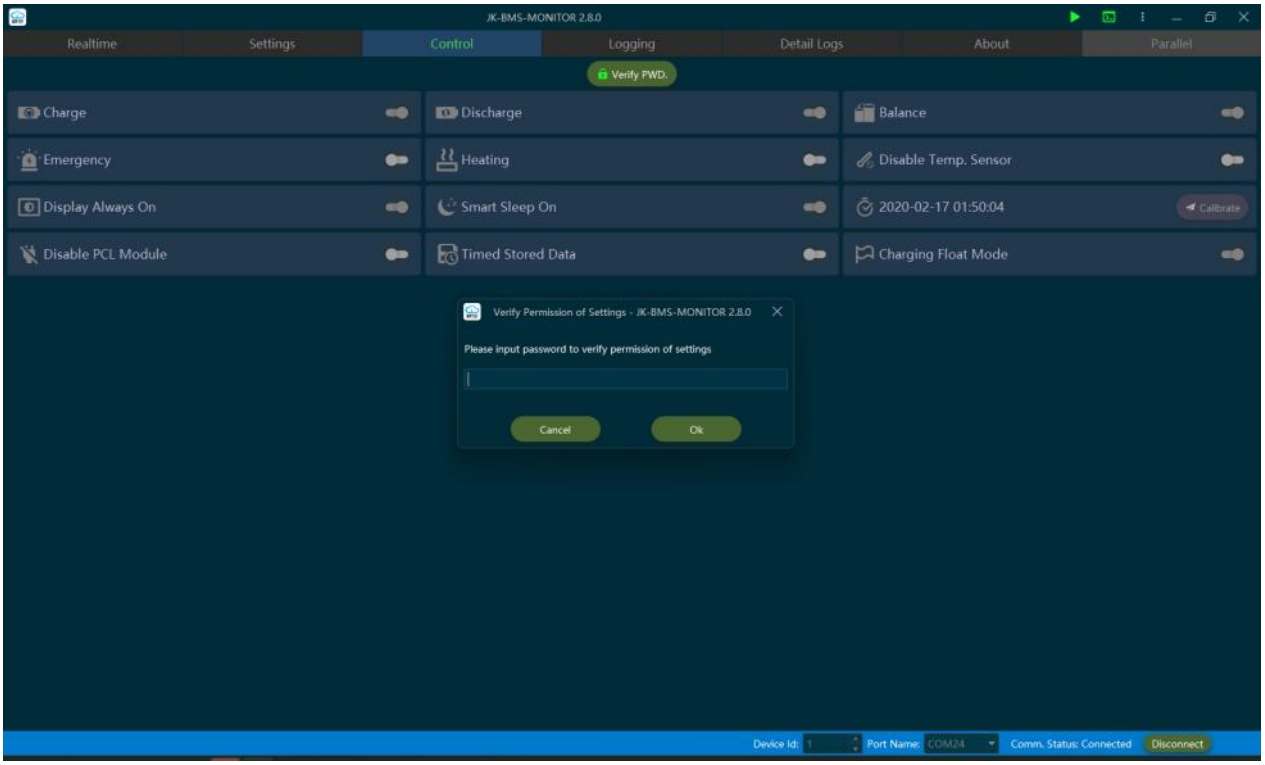


2) Open the computer software and click "Connect."

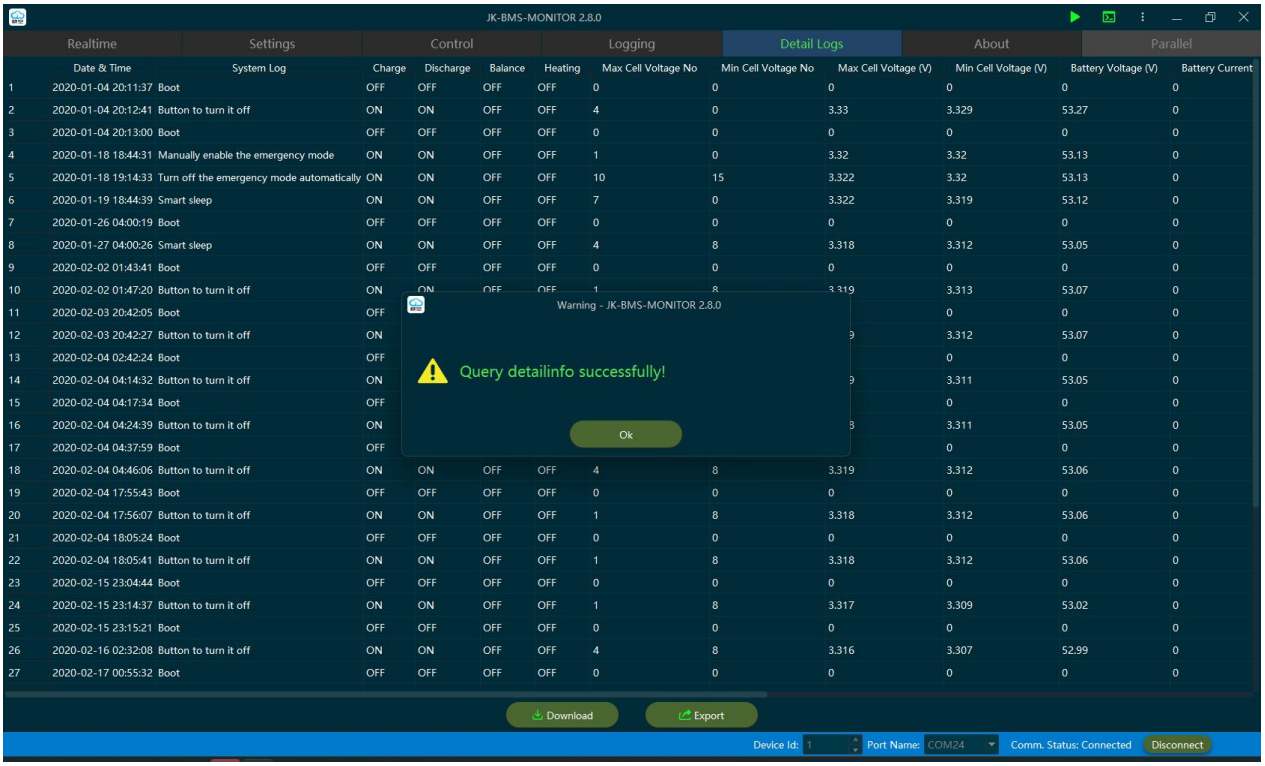
Computer software download link:
https://drive.google.com/drive/folders/1ko1IxcJVH07c7-ghCNEnsWAYiKJ8L9nE?usp=drive_link

3) On the real-time status page, you can view battery voltage, current, capacity, abnormal alarms, status, and other information.

4) In the "Parameter Settings" and "BMS Control" pages, settings cannot be modified in the default state and require changes through "Authorization Settings," with the default password being "123456."



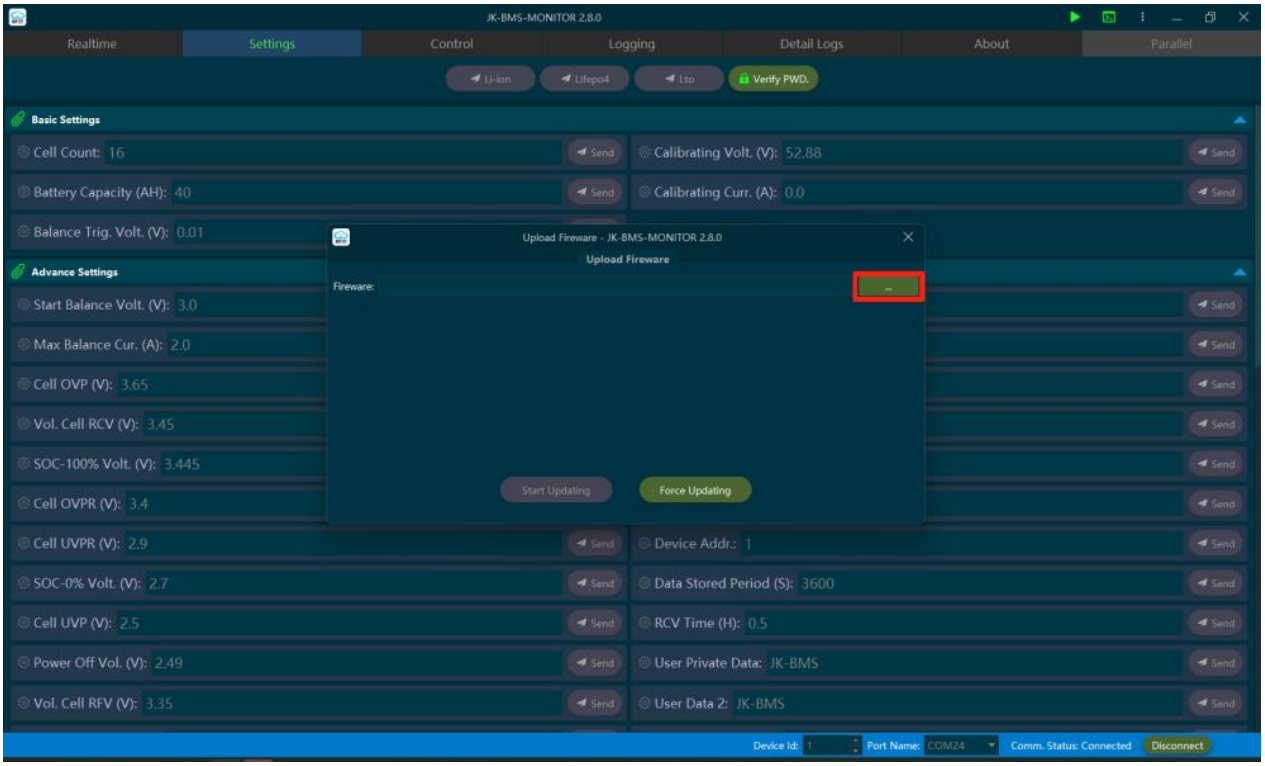
5) On the fault download page, the "Fault Download" button can update the internal fault logs of the BMS to the computer software for display. The "Export Fault" button allows you to export all currently displayed fault logs in Xlsx format to a specified folder on the computer, which can be viewed using Excel or other software.



	Date & Time	System Log	Charge	Discharge	Balance	Heating	Max Cell Voltage No	Min Cell Voltage No	Max Cell Voltage (V)	Min Cell Voltage (V)	Battery Voltage (V)	Battery Current
1	2020-01-04 20:11:37	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0
2	2020-01-04 20:12:41	Button to turn it off	ON	ON	OFF	OFF	4	0	3.33	3.329	53.27	0
3	2020-01-04 20:13:00	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0
4	2020-01-18 18:44:31	Manually enable the emergency mode	ON	ON	OFF	OFF	1	0	3.32	3.32	53.13	0
5	2020-01-18 19:14:33	Turn off the emergency mode automatically	ON	ON	OFF	OFF	10	15	3.322	3.32	53.13	0
6	2020-01-19 18:44:39	Smart sleep	ON	ON	OFF	OFF	7	0	3.322	3.319	53.12	0
7	2020-01-26 04:00:19	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0
8	2020-01-27 04:00:26	Smart sleep	ON	ON	OFF	OFF	4	8	3.318	3.312	53.05	0
9	2020-02-02 01:43:41	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0
10	2020-02-02 01:47:20	Button to turn it off	ON	ON	OFF	OFF	1	8	3.319	3.313	53.07	0
11	2020-02-03 20:42:05	Boot	OFF							0	0	0
12	2020-02-03 20:42:27	Button to turn it off	ON						9	3.312	53.07	0
13	2020-02-04 02:42:24	Boot	OFF							0	0	0
14	2020-02-04 04:14:32	Button to turn it off	ON						9	3.311	53.05	0
15	2020-02-04 04:17:34	Boot	OFF							0	0	0
16	2020-02-04 04:24:39	Button to turn it off	ON						8	3.311	53.05	0
17	2020-02-04 04:37:59	Boot	OFF							0	0	0
18	2020-02-04 04:46:06	Button to turn it off	ON	ON	OFF	OFF	4	8	3.319	3.312	53.06	0
19	2020-02-04 17:55:43	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0
20	2020-02-04 17:56:07	Button to turn it off	ON	ON	OFF	OFF	1	8	3.318	3.312	53.06	0
21	2020-02-04 18:05:24	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0
22	2020-02-04 18:05:41	Button to turn it off	ON	ON	OFF	OFF	1	8	3.318	3.312	53.06	0
23	2020-02-15 23:04:44	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0
24	2020-02-15 23:14:37	Button to turn it off	ON	ON	OFF	OFF	1	8	3.317	3.309	53.02	0
25	2020-02-15 23:15:21	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0
26	2020-02-16 02:32:08	Button to turn it off	ON	ON	OFF	OFF	4	8	3.316	3.307	52.99	0
27	2020-02-17 00:55:32	Boot	OFF	OFF	OFF	OFF	0	0	0	0	0	0

6) Click the three-dot icon in the upper right corner of the host computer, then click "Upgrade Firmware."

7) Select the firmware to be upgraded and click "Start Upgrade." The upgrade is complete when the progress bar ends.



4. General Connection Method for Battery and Inverter

4.1. Connection Steps

1) Connect the positive (red) and negative (black) terminals of the battery main unit (address switch set to 0) to the inverter main unit using power cables.

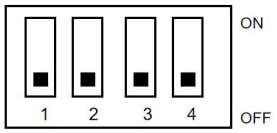
2) Connect the battery main unit (RS485A or CAN, depending on the inverter choice) to the inverter main unit using the inverter communication cable.

3) In the computer software, go to the "Parameter Settings" page and select the appropriate inverter protocol from "Serial Port 1 Protocol" or "CAN Protocol List."

4.2. Notes

- The address switch of the main battery unit should be set to 0, while other battery address switches should be set to 1-15.
- When connecting batteries in parallel, ensure that the protocol values for Serial Port 2 of each battery are the same; if they differ, please upgrade the firmware.
- When using multiple GP-SR1-JK314 units in parallel, each GP-SR1-JK314 must have a unique address switch setting, and the address settings must not be duplicated.

5. Schematic Diagram of Battery Dial Address



Address	Dial switch position				Explanation
/	#1	#2	#3	#4	/
0	OFF	OFF	OFF	OFF	Set to Pack0 (Master)
1	ON	OFF	OFF	OFF	Set to Pack1
2	OFF	ON	OFF	OFF	Set to Pack2
3	ON	ON	OFF	OFF	Set to Pack3
4	OFF	OFF	ON	OFF	Set to Pack4
5	ON	OFF	ON	OFF	Set to Pack5
6	OFF	ON	ON	OFF	Set to Pack6
7	ON	ON	ON	OFF	Set to Pack7
8	OFF	OFF	OFF	ON	Set to Pack8
9	ON	OFF	OFF	ON	Set to Pack9
10	OFF	ON	OFF	ON	Set to Pack10
11	ON	ON	OFF	ON	Set to Pack11
12	OFF	OFF	ON	ON	Set to Pack12
13	ON	OFF	ON	ON	Set to Pack13
14	OFF	ON	ON	ON	Set to Pack14
15	ON	ON	ON	ON	Set to Pack15

6. List of BMS Compatible Inverters

RS485 Port	**CAN Port**
1. Voltronic	1. Deye
2. SRNE	2. Goodwe
3. Growatt	3. Growatt
	4. INVT
	5. SMA
	6. Victron
	7. Pylontech