赣锋锂电
GanfengLiEnergy

Lithium-ion Battery Pack

User's Manual

赣锋锂电
GanfengLiEnergy

http://www.ganfengbattery.com/

CONTENT

1. Product overview

1.1 Introduction:

The model LiFePO4 battery pack is designed specifically for energy storage systems, with higher efficiency and higher reliability. With the intelligent battery management system, the intelligent battery detection system.
This model of LiFePO4 battery pack is ideal for off-grid and hybrid utilization, providing a long-term built solution, and has the ability to deploy and use in a variety of scenarios, such as homes, farms, factories, data rooms, hotels, etc.

1.2 Features:

★ LiFePO4 chemicals give batteries a safer performance, longer life and energy density

★ The fully intelligent battery management system (BMS) protects the battery pack and the battery from over-discharge, over-charge, over-current, and high/low temperature

★ The intelligent monitoring system, which can monitor and download the data to the computer in real time

★ The battery comes with a balance function that greatly extends the service life of the battery

★ The has no memory effect, and can deeply charge and release the battery

★ The self-discharge consumption is very small, more than 24 hours without the battery will automatically enter the low power mode

★ Environmentally friendly, free of heavy metals and harmful substances, and meets the ROHS requirements

★ The battery can be used in parallel for any scenario requiring a large power backup

★ Battery do not require active maintenance, one-time purchase guarantees life (assuming you use the right battery and follow the guidelines)

★ Cell meets IEC62619, CE standards, and ROHS requirements

1.3 Specification and Performance:

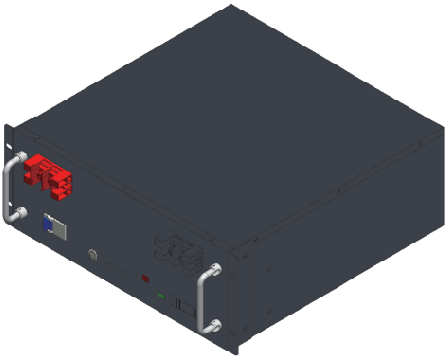
1.3.1 Parameters

Project	Conventional Parameters	Conventional parameters
Battery Type	LiFePO4	LiFePO4
Compound Mode	1P15S	1P16S
Rated Capacity	100Ah	100Ah
Nominal Voltage	48V	51.2V
Internal Resistance	⩽40mΩ	⩽40mΩ
Maximum charging persistent current	100A	100A
Maximum discharge persistent current	100A	100A
Recommended Charging Current	40A	40A

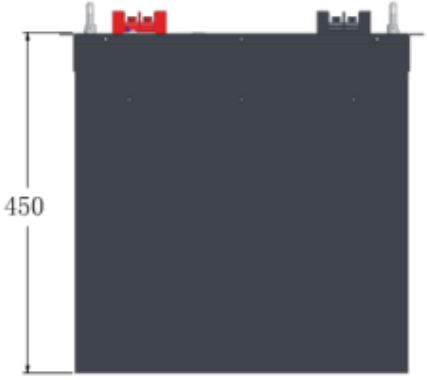
Project	Conventional Parameters	Conventional parameters
Operating Temperature Range	Charge: 0~50℃	Charge: 0~50℃
	Discharge: -10~50℃	Discharge: -10~50℃
Storage Temperature Range	20~30℃	20~30℃
Size /mm	442*177*450	442*177*450
Weight	47±1KG	49±1KG
Live Capacity Of Products Shipped	50% -60% Electricity delivery	50% -60% Electricity delivery
Packaging Material	Carton	Carton
Communication	RS485 / RS232 / Dry Contact Point	RS485 / RS232 / Dry Contact Point

1.3.2 Interface Definition

A) Battery Appearance

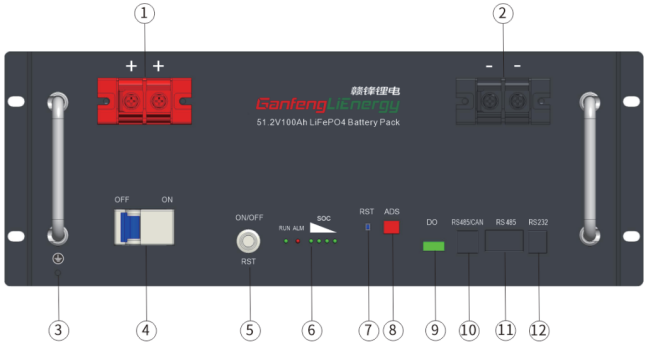


B) Battery Size



Name	Numeric Value	Numeric Value
Energy (KW.h)	4.8	5.12
Length (mm)	442	442
Width (mm)	450	450
Height (mm)	177	177

C) Panel Interface Refer To The Following Figure



Number	Project	Description
1	Positive Terminal	A pair of terminals with the same function, one connected device is expanded in parallel with other batteries. For each individual module, each terminal can realize the charge and discharge function.
2	Negative Terminal	A pair of terminals with the same function, one connected device is expanded in parallel with other batteries. For each individual module, each terminal can realize the charge and discharge function.
3	Earth Point	Must be grounded for product safety
4	Air Switch	Turn off the positive terminal suboutput to protect the battery
5	Weak Current Switch	Turn the entire battery on / off
6	Pilot Lamp	Displays the battery status, alarm, and capacity
7	Reset Key	Sleep / activation / reset
8	Dial Key	When multiple modules are connected in parallel, different address codes can be specified for each battery module, up to 15
9	Dry Contact Point	1 / 2 Open, close when fault protection; 3 / 4 open, low battery power alarm
10	RS485/CAN	RJ45 interface, the interface connected to the inverter
11	RS485	RJ45 interface, used for parallel communication or battery status monitoring, manufacturer commissioning, and service
12	RS232	RJ11 interface, used for battery status monitoring

2. Battery management system

2.1 Description of the L E D indicator lamp

State		Charge				Discharge			
Capacity Indication		L1 ●	L2 ●	L3 ●	L4 ●	L1 ●	L2 ●	L3 ●	L4 ●
Quantity Of Electricity	0%~25%	OFF	OFF	OFF	Flashing 2	OFF	OFF	OFF	ON
	25%-50%	OFF	OFF	Flashing 2	ON	OFF	OFF	ON	ON
	50%~75%	OFF	Flashing 2	ON	ON	OFF	ON	ON	ON
	75%~100%	Flashing 2	ON	ON	ON	ON	ON	ON	ON
Run The Indicator lamp, the ●		ON				Flashing 3			

2.2 Status indication

System Mode	Anomalous event	RUN	ALM	Quantity Of Electricity LED				Remark
		●	●	●	●	●	●	
Shutdown Status	Resting State	OFF	OFF	OFF				
Stand By	Normal	Flashing 1	OFF	According to the electricity instruction				Stand By
	Report an emergency	Flashing 1	Flashing 3					
Charge	Normal	ON	OFF	According to the electricity instruction (Top indicator LED flashing 2)				Alarm ALM Flashing 3
	Report an emergency	ON	Flashing 3					

System Mode	Anomalous event	RUN	ALM	Quantity Of Electricity LED	Remark
		●	●	● ● ● ●	
Discharge	Normal	Flashing 3	OFF	According to the electricity instruction	
	Report an emergency	Flashing 3	Flashing 3		
	Undervoltage Protection	OFF	Flashing 3	OFF	Stop Discharge
	Overcurrent Protection	OFF	ON	OFF	Stop Discharge
Temperature	Protect	OFF	ON	OFF	Stop Charging And Discharging
Lose Efficacy	Cell Failure, NTC Failure	OFF	ON	OFF	Stop Charging And Discharging
	Voltage Sensor Fails				
	Current Sensor Fails				
	Charge And Discharge MOS Failure				

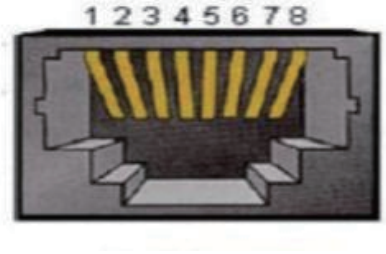
2.3 The LED Indicator Lamp Flashing Description

Flashing Mode	ON	OFF
Flashing 1	0.25s	3.75s
Flashing 2	0.5s	0.5s
Flashing 3	0.5s	1.5s

3. Communication

A dual RS485 interface with upper computer communication enables multi-machine parallel communication.
The communication specification shall refer to the communication protocol specification.

3.1 RS485 interface

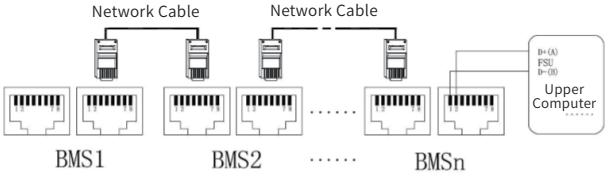


Rs485 Communication Interface

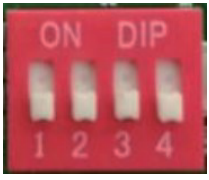
RS485- -Using an 8P8C upright RJ45 socket	
RJ45 Pin	Defined Declaration
1、8	RS485-B
2、7	RS485-A

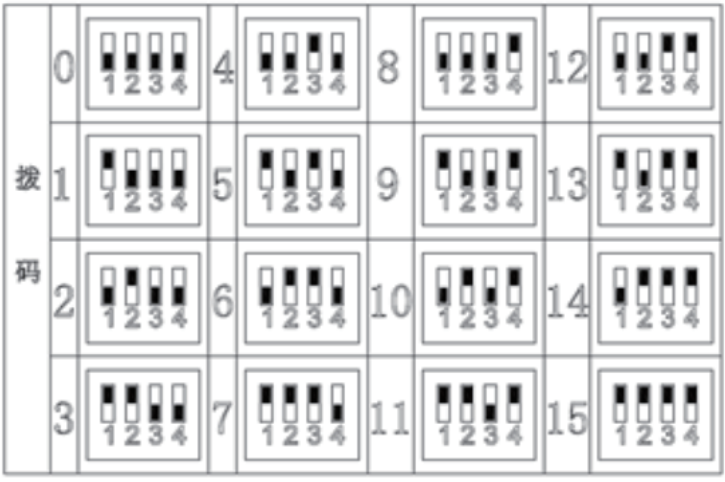
3.2 Connected Machine Interface

The BMS battery room communicates in parallel through the RS485 bus, and can also communicate with the equipment with the RS485 bus. Any battery pack information of the human-computer interaction RS485 bus in parallel is shown in the following figure.



3.3 Address Dial Code Switch





(Figure 4-bit above)

3.3.1 Dial-UP Settings

When conducting multi-machine parallel communication operation, the dialing address configuration of each PACK is required first. Dial code adopts BCD code format, the address of 0 is defined as 

(black p FF status, blank is ON status, the same below), address 1 , address 2 

r addresses, an 

3.3.2 Upper-computer communication address setting

Communication in the system parameters of the upper computer computer to enter the code system of the current main or slave to the communication, communication can be detected and communication.

BMS is configured as stand-alone working mode, and the dial address can be any address; BMS is configured as cascading working mode, with the dial address to pull out different addresses from 1 to 15.

4. Battery Use Instructions

4.1 Charging

★ Charging current: cannot exceed the maximum charging current specified in this specification

★ Charging voltage: shall not exceed the maximum charging voltage specified in this specification

★ Charging temperature: The battery must be charged within the ambient temperature range specified in this specification

★ The adopts constant current and constant pressure charging mode, and forbids reverse charging. If the positive electrode of the battery meets the negative electrode in the opposite, it will damage the battery

4.2 Discharge

★ Discharge Current: the discharge current shall not exceed the maximum discharge current specified in this instruction. Excessive current discharge will reduce the battery capacity and cause the battery to heat up.

4.3 Discharge Temperature

★ Battery discharge must be within the temperature range specified in this specification Immediately charging after a short time of excessive discharge will not affect the use, but a long time of excessive discharge will lead to the loss of battery performance and battery function.

If the battery is not used for a long time, it may be in a certain discharge state due to its self-power consumption characteristics. In order to prevent the occurrence of overdis-charge, the battery should maintain a certain amount of electricity.

5. Notes For Product Use

5.1 Warnings

★Do Not Put The Battery Into The Water Or Wet It.

★Forbids Charging And Using The Battery Outside Our Specified Temperature Range; Do Not Store, Charge, And Use The Product Near The Fire Sources Or Heat Sources.

★When The Battery Pack Emits An Odor Or Leakage, It Should Immediately Stop Using Or Stop Charging, And Move To The Open And Ventilated Place, Stay Away From The Fire Source, And Contact Us In Time.

★The Optimal Service Temperature Of Products Is 25 ± 5℃, If The Product Is Not In This Temperature Range During Use.

★Load Use, Do Not Connect Positive And Negative Poles.

★Do Not Short-circuit The Positive And Negative Electrodes Of The Battery Pack With A Metal Conductor.

★Do Not Fire The Battery Pack Or Heat It.

★It Is Strictly Prohibited To Dissect The Battery Pack, Puncture The Battery Pack With Nails Or Sharp Objects, Use Hammers Or Other External Forces, And Trample Or Fall The Battery Pack.

★Strictly Putting Battery Packs In A Microwave Or Pressure Vessel.

5.2 Charging and Discharge

★ The Battery Must Be Charged Using An Appropriate Charger.
★ Do Not Use A Modified Or Damaged Charger.
★ During Charging And Use, Please Stop Charging And Using It Immediately.

5.3 Storage

★The Stores The Battery In A Cool, Dry, And Well-ventilated Place. If More Than Three Months Of Long Storage, It Is Recommended That You Should Charge The Battery Extra.

5.4 Processing

★ Different Countries Have Different Regulations, Please Handle According To The Local Regulations.

If There Is Any Fault Or Abnormality During Use, Please Contact Us And Do Not Remove The Battery Pack Without Permission.