



## Lithium Iron Phosphate Battery Specification Ver1.0

<b>Part name</b>	LiFePO <sub>4</sub> Battery
<b>Model No</b>	PKG-AIO51.2V 100Ah
<b>Drafted by</b>	Xiaojun Nie
<b>Signed by</b>	Wenfei Liang
<b>Date</b>	2024-07-04

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## Product Modified Record List

Revision	Date	Modified Content	Corrected person
A1	2024-07-04		

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## 1.Scope

The specification shall be applied to LiFePO<sub>4</sub> rechargeable battery pack Of PKG-AIO51.2V 100Ah which is manufactured by SHENZHEN PKNERGY ENERGY CO.,LTD.

## 2.Battery Pack specifications

No.	Item	General Parameter		Remark
1	Combination method	16S1P		51.2V 100Ah
2	Rated Capacity	Typical	100Ah	Standard discharge after Standard charge (package)
		Minimum	98Ah	
3	Voltage Range	57.6~43.2V		
4	Voltage at end of Discharge	57.6V		Discharge Cut-off Voltage
5	Charging Voltage	43.2V		
6	Internal Impedance	≤60m Ω		Internal resistance measured at AC 1KHZ after 50% charge The measure must uses the new batteries that within one week after shipment and cycles less than 5 time
7	Standard charge	Constant Current 0.2C Constant		Charge time ( Approx ) :6.5h
8	Standard discharge	Constant current : 0.2C end voltage		
9	Maximum Continuous Charge Current	50A		T≥ 10°C
10	Maximum Continuous Discharge Current	100A		T≥ 10°C
11	Operation Temperature Range	Charge : 0~50°C		60± 25%R .H. Bare Cell
		Discharge : -20~55°C		
12	Storage Temperature Range	Less than 12 months :-10~35°C		60± 25%R .H. at the shipment state
		less than 3 months: -10~45°C		
		Less than 7 day : -20~55°C		
13	Dimensions ( Battery )	D160*W420*H635mm		
14	Weight	46.5kg		

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## 2.1 Inverter/Product parameters

No.	Item	General Parameter	Remark
1	Inverter power	5KW	Can be selected according to demand
2	Rated energy	5.12KWh	
3	Grid voltage range	220V/230V	50-60Hz
4	Grid type	W+N+PE	
<b>PV Input Data</b>			
5	MPPT voltage range(V)	120-430V	
6	Number of MPPT	1	
<b>General data</b>			
7	Operating Temperature Range (°C)	25~60°C, >45°C Derating	
8	Cooling	Smart cooling	
9	Installation Style	Pile up	
10	Output Over Current Protection	Integrated	
11	Output Over Voltage Protection	Integrated	
12	PV Input Lightning Protection	Integrated	
13	Storage Temperature Range	-20°C~60°C	Recommend ( 25±3°C ) ; ≤90%RH storage moisture range.
14	Class of protection	IP20	
15	Dimensions ( Product )	D477*W420*H721mm	
16	Weight	73Kg	

## 3.BMS function introduction

The BMS is designed for 15/16 series lithium battery.

The BMS have all functions which are :

Overcharge detection function/Over discharge detection function/Over current detection function/Short detection function/Temperature detection function/Balance function/Communicate function/Alarm function/Total capacity function/Storage history function.

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### 3.1BMS Protect parameter

Items	Details	Standard
Cell overcharge protection	Overcharge detection voltage	3.6±0.025V
	Overcharge detection delay time	Typical:1.0s
	Overcharge release voltage	3.38±0.02V
Cell over-discharge protection	Over-discharge detection voltage	2.7±0.02V
	Over-discharge detection delay time	Typical:1.0s
	Over-discharge release voltage	2.95±0.02V
Over-current protection	discharge Over-current protection current1	110A
	discharge Over-current detection delay time 1	1S
	discharge Over-current protection current 2	150A
	discharge Over-current detection delay time 2	≤200m±50ms
	Charge OC protection current	110A
Short protection	Short protection current	350A
	Protection condition	Load short
	Detection delay time	≤30ms
	Protection release condition	Charging
Temperature(T) protection	Charge high T protection	55±3°C
	Charge high T recover	47±4°C
	Discharge high T protection	60±3°C
	Discharge high T recover	50±4°C
	Charge low T protection	0±3°C
	Charge low T recover	5±4°C
	Discharge low T protection	-20±3°C
	Discharge low T recover	-10±4°C
Balance	Balance threshold voltage	3.45V

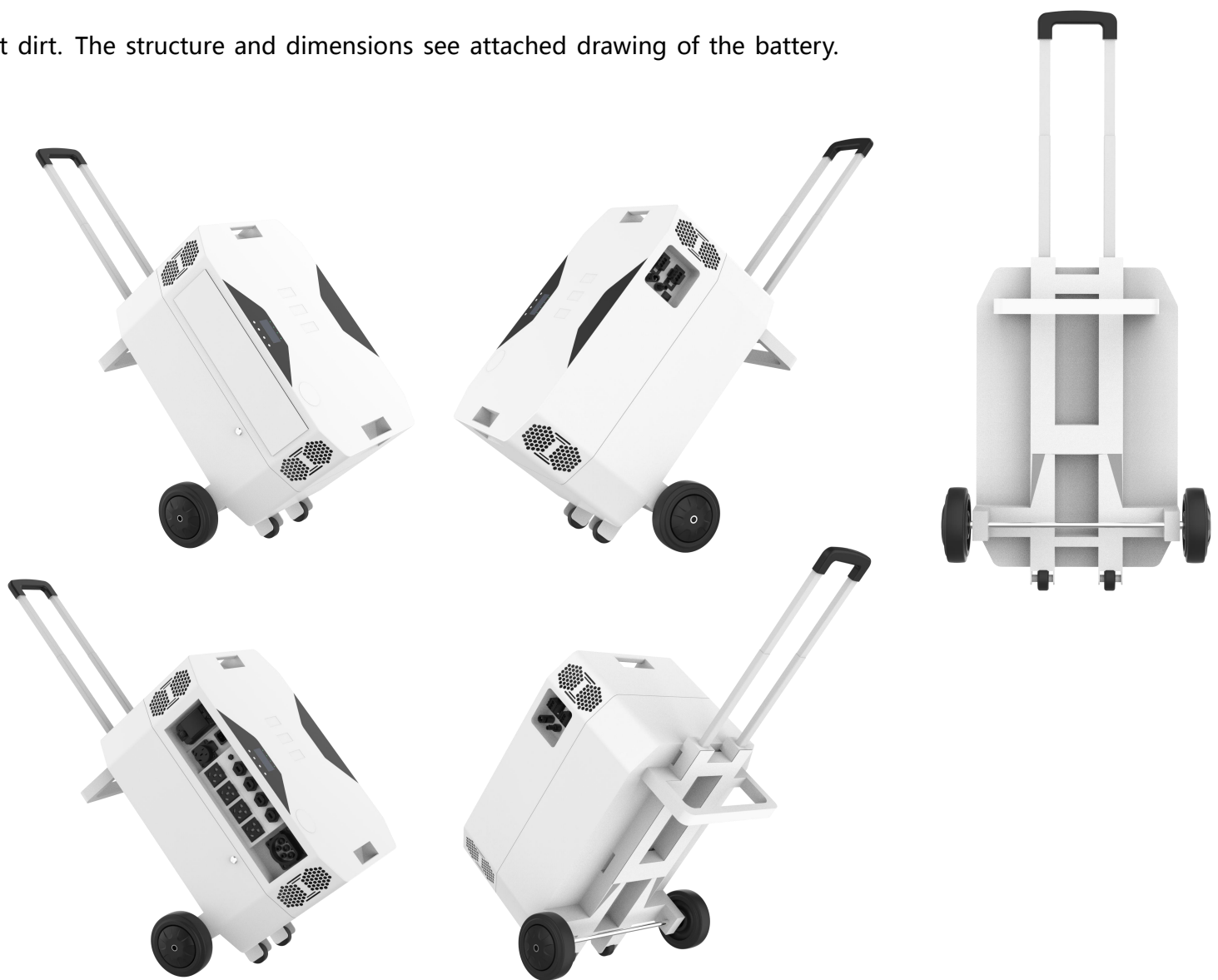
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Communication	It has RS232 /RS485 and canbus standard communication interface, it can real-time monitoring the capacity of battery bank, the voltage, current, environment temperature, and charging/discharging current.
Alarm	It has over-temperature, over charge, under-voltage, over-current, short circuit alarm Function.

#### 4.Appearance and structural dimensions

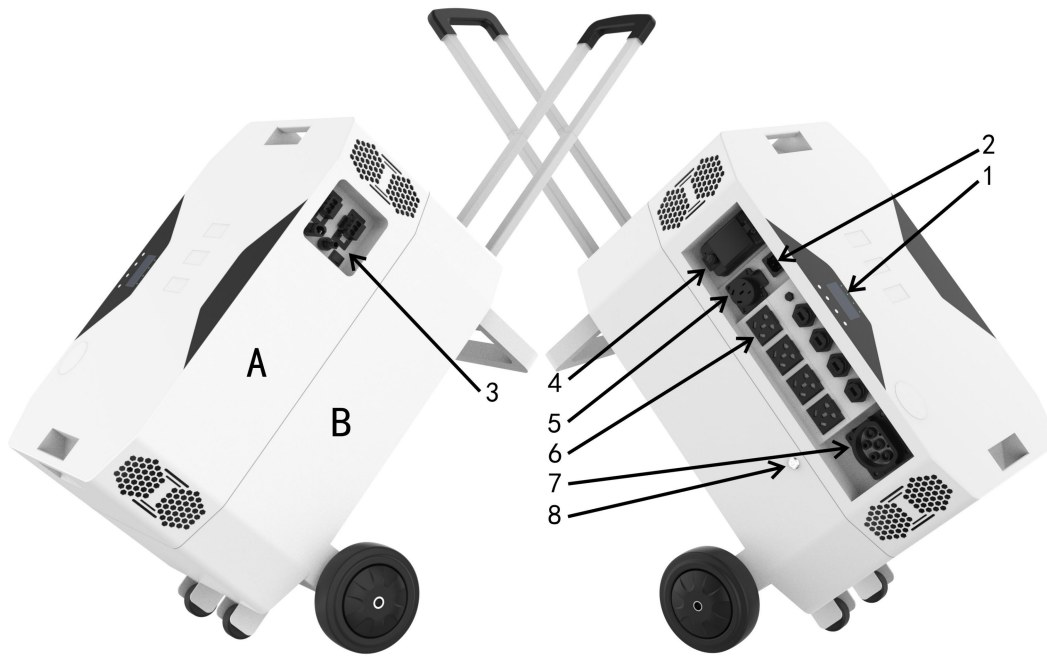
There shall be no such defect as scratch, bur and other mechanical scratch, and the connector should be no rust dirt. The structure and dimensions see attached drawing of the battery.



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## 5. Function interface description



No.	Description	Silk-screen
1	LCD	MEUN/Enter/UP/ESC
2	Grid	AC-Grid
3	PV Input	MPPT 1
4	Circuit breaker switch	ON/OFF
5	Load 1	AC ( Load )
6	Load 2	AC ( Load )
7	Charging gun	Electric vehicle use
8	E-Switch	ON/OFF
A	Inverter	5KW
B	Battery	5KWh

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## 6.Storage and Others

### 6.1 Long Time Storage

If stored for a long time(don't used,exceed three months), the cell should be stored in drying and cooling place. The cell's storage voltage should be 48V-51V and the cell is to be stored in a condition that the temperature of  $23 \pm 2^{\circ}\text{C}$  and the humidity of 45%-75%. Long-term use of unused batteries to recharge every 3 months. Ensure that the battery voltage is within the above range.

### 6.2 Others

Any matters that this specification does not cover should be conferred between the customer and SHENZHEN PKNERGY ENERGY CO.,LTD.

## 7.Amendment of this Specification

This specification is subject to change with prior notice.

### **Danger!**

- Do not immerse the battery in water or allow it to get wet.
- Do not use or store the battery near sources of heat such as a fire or heater.
- Do not reverse the positive(+) and negative(-) terminals.
- Do not put the battery into a fire or apply direct heat to it.
- Do not short-circuit the battery by connecting wires or other metal objects to the positive(+) and negative(-) terminals.
- Do not pierce the battery casing with a nail or other sharp object, break it open with a hammer,or step on it.
- Do not strike, throw or subject the battery to sever physical shock.
- Do not directly solder the battery terminals.
- Do not attempt to disassemble or modify the battery in any way.

.....EDN.....

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