

Specification for 10KWh LiFePO4 Battery with 5KW Inverter

Product Model : RK51200LFP-HES-AC5K

Product application: Household Energy Storage

Product name: All-in-one ESS Battery with Inverter

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Customer Signature	

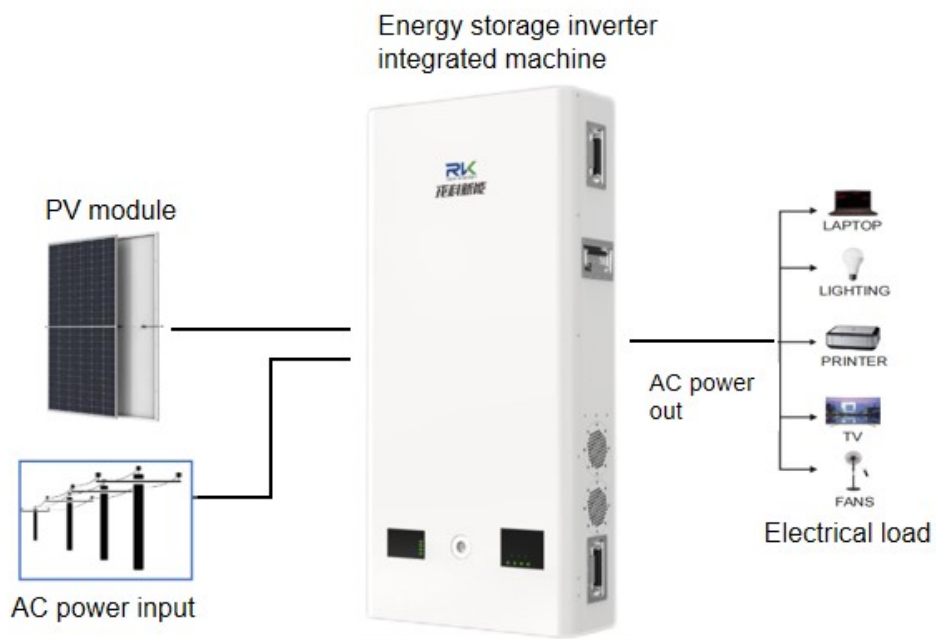
Change Records

Revision	Description	Date
V1.0	Preliminary draft	2022.11.29

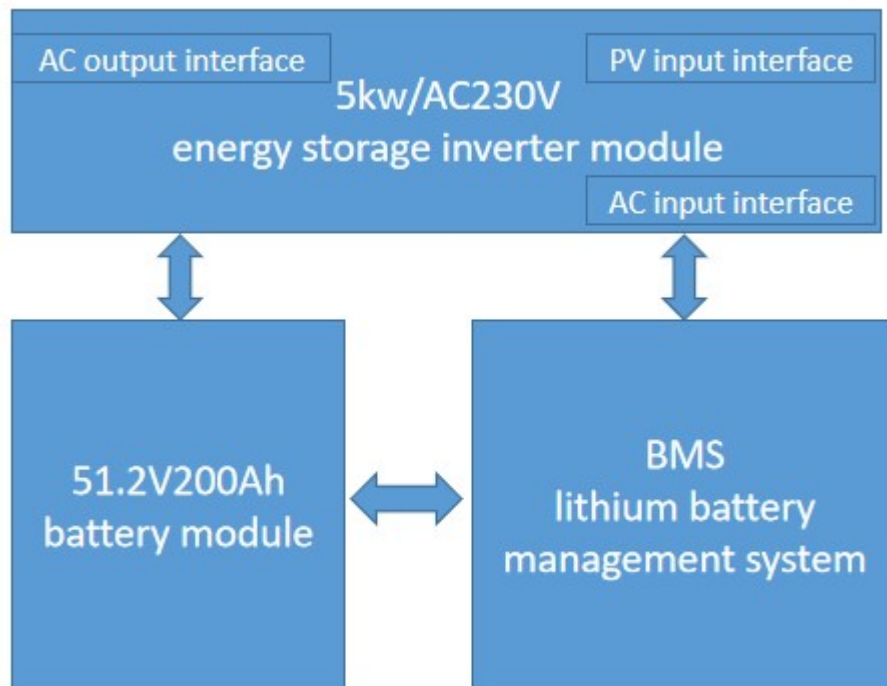
Product Description

This All-in-one ESS Battery with Inverter combines a 10KWh energy storage battery and an off-grid 5kw inverter. The battery module is a lithium iron phosphate battery (LiFePO4 technology) with high safety and high reliability. The output voltage for the pure sine wave inverter is AC230V, and it can support photovoltaic access at the same time, very convenient for users to install and maintain.

2. Product System Architecture Diagram



2.1 System Principle



3. Battery Technical Specification

No.	Item	Specification	Remarks
1	Battery Pack	16S2P	Cell 105Ah
2	Energy	10.24kwh	
3	Rated Capacity	200Ah@25°C 0.3C	
4	Minimal Capacity	198Ah@25°C 0.3C	
5	Rated Voltage	51.2V	
6	Charge Voltage	57.6V	
7	Charge Mode	CC/CV	
8	Discharge Cut Off Voltage	46.4V	
9	Rated Charge Current	75A @25°C	
10	Max Charge Current	100A @25°C	
11	Rated Discharge Current	75A	
12	Max Discharge Current	100A	
13	Internal Resistance	≤30mΩ @AC 1kHz	
14	Working Temperature	Charge: 0°C to 45°C Discharge: -20°C to 55°C Storage: 0°C to 40°C	
15	Communication	RS485	
16	Screen	LCD Screen	
17	Shell Material	Stainless steel	
18	Dimensions	1100*520*195 (L*W*H)	
19	Weight	≈100kg	
20	Protection Class	IP21	
21	Safety Certificate	UN38.3/MSDS/UL	

4. Inverter Specification

No.	Item	Technical Parameters	Remarks
1	AC Input Voltage	220V/230Vac	EU standard / Off grid
2	AC Input Voltage Range	APL DG model: 90Vac-280Vac; UPS City Power: 170Vac-280Vac;	
3	AC Charge Current	Max 60A	
4	AC Charge Efficiency	>95%	
5	Conversion time (bypass and inversion)	10mS	
6	Output voltage wave	pure sine wave	
7	AC output rated voltage	230Vac	
8	Rated output power	5000W	
9	Peak power	10000VA	
10	Maximum efficiency	92%	
11	No-load power consumption	≤50W	
12	PV input voltage range	60-145Vdc	
13	Maximum PV input current	50A	
14	Maximum PV input power	4400W	
15	Maximum PV charging current	80A	
16	Rated battery input voltage	48V	
17	Battery voltage range	40Vdc-60Vdc	
18	Wi-Fi Module	Optional	
19	Safety Certificate	CE/EN61000/UL	

5. BMS Specification

Item	Test item	Specifications			Units
		Min Value	Typical Value	Max Value	
Voltage	Over charge detection voltage	3.65	3.70	3.75	V
	Over charge protection delay time	500	1000	2000	mS
	Over charge detection release voltage	3.40	3.45	3.50	V
	Over discharge detection voltage	2.450	2.500	2.550	V
	Over discharge protection delay time	500	1000	2000	mS
	Over discharge detection Release voltage	2.650	2.700	2.750	V
Current	Over discharge current detection	110	120	130	A
	Over discharge protection delay time	800	1000	1500	mS
	Continuous charging current	--	100	--	A
	Continuous discharge current	--	100	--	A
Short protection	Short-circuit protection delay time	200	330	800	uS
	Short circuit protection recovery	Disconnect load			
Equilibrium function	Equilibrium voltage	3.425	3.45	3.475	V
	Equalizing current	30			mA
Interior resistance	/	/	10	20	mR
Temperature	Working temperature	-20		60	°C
	Storage temperature	-40		65	°C

6. Warning & User Instructions

- In order to prevent possible battery leakage, overheating, and expansion, please keep the following in mind.
- Do not throw the battery into water or fire
- Do not immerse the battery in seawater or water. When the battery is not in use, please store it in a dry environment.
- It is forbidden to use in strong static electricity and strong magnetic field, otherwise the protection board will be easily damaged.
- Do not place the battery alone near high temperature sources such as open flames, heat sources, etc.
- Do not directly short-circuit the battery with metal substances.
- Do not touch, drop or pressurize the battery again.
- It is forbidden to directly weld the battery and use other sharp tools such as nails to punch holes in the battery.
- If the battery smells, heats up, deforms or appears other abnormalities, please remove the battery immediately or stop using the charger.
- If the battery leaks and the electrolyte enters the eyes, please do not rub them, and immediately rinse the eyes with clean water and seek medical treatment, otherwise it may damage the eyes. When the battery is in long-term storage or loaded into the host, it is recommended to charge and discharge it every 3 months, and then charge it to a half-charged state (charging method: 0.33C to charge and 0.33C to discharge).