



Product Specifications

Power Base Cube

Industrial and Commercial Energy Storage Systems

Version	Prepare	Check	Approve	Date
V1.0	ZJM			2020-06-10



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1. Introduction

Power base Cube is a 10 feet container size micro-grid energy storage system developed and designed by GARAYE, offering various configurations to suit different needs and supporting up to 100kW load operation. It can be applied to PV storage micro-grid, PV storage diesel micro-grid, diesel engine replacement and optimal control, emergency power supply and power backup.

2. Features

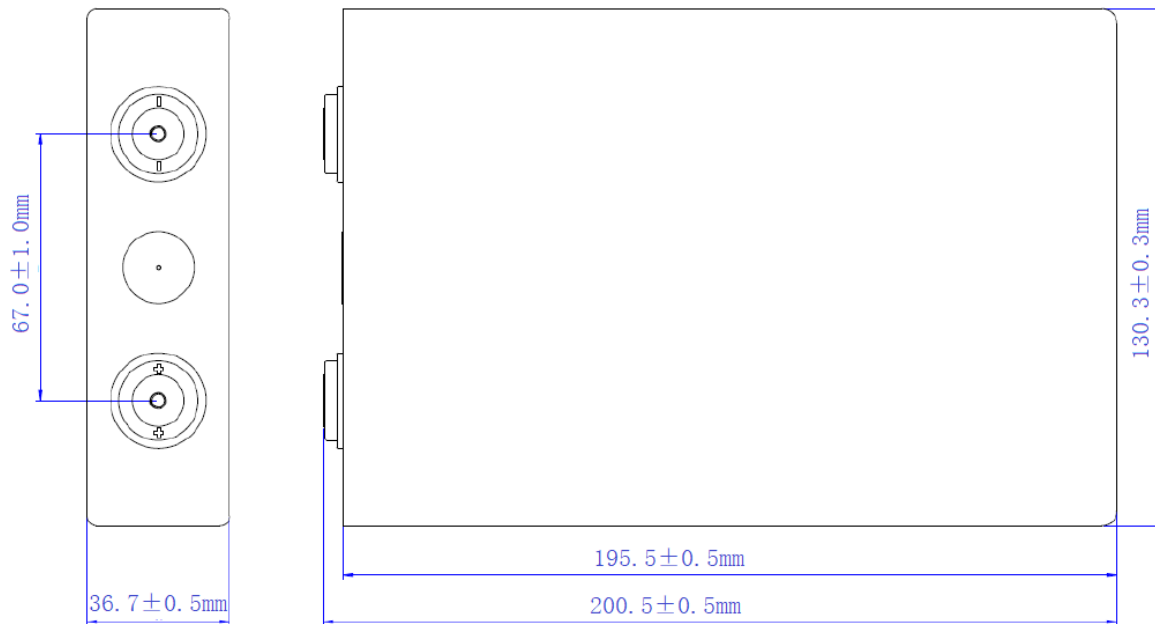
- Adopt high safety, long life, excellent performance LiFePO4 prismatic cells;
- Modular structure, flexible configuration of system capacity;
- Standard container, turnkey system;
- Intelligent battery management, within local EMS;
- Support the access of other micro-sources to realize the intelligent and efficient management of the system;
- Outdoor IP55 protection level, Dustproof, waterproof and corrosion-proof;
- Constant temperature design in the warehouse, the battery works in the best temperature environment.
- Intelligent fire fighting system, automatic fire extinguishing;
- Intelligent sound and light alarm and remote upload function, high security





3. Specifications

3.1. Cell Parameters



No.	Items	Parameters	
1	Cell Type	LiFePO4 Prismatic	
2	Nominal Capacity	105Ah	
3	Nominal Voltage	3.2V	
4	Maximum Charge Current	Continuous	1C
5		Peak for 30s	1C
6	Maximum Discharge Current	Continuous	1C
		Peak for 30s	3C
7	Temperature Range	Charging	0°C ~ 55°C
		Discharging	-20°C-55°C
		Recommended Working	15°C ~ 35°C
8	Weight	1980±100g	



3.2. Battery Module Parameters



No.	Items	Parameters
1	Model	GR-FE38210-1235R1
2	Cell Configuration	12S2P
3	Nominal Capacity	210Ah
4	Nominal Energy	8.06Wh
5	Weight (Approx.)	62kg
6	Dimensions (W*D*H)	440*408*152 mm (Handles and connectors are not included)

3.3. Main Control Module Parameters



No.	Items		Parameters
1	Model		GR-MC500-100EF
2	Operation Voltage Range		200Vdc – 600Vdc
3	Maximum Operation Current		≤120A
4	Communication	COM-2	CAN, Battery Module Parallel, BMS power supply
		COM-1	RS485 , Monitoring Devices
		Link A, Link B	Cabinet Parallel, PCS communications
		CAN/RS485	communication interface with PC
5	Weight		10.5kg
6	Dimensions (W*D*H)		440*408*133 mm (Handles and connectors are not included)



3.4. System Parameters



3.4.1. General Specifications

Regular Technical Features		
Grid Voltage	400Vac	
Grid Frequency	50/60Hz (±2.5Hz)	
Rated Power	50kW/100kW	
Rated Energy	96.8kWh-387kWh	
Protection Level	IP54	
Working Temp Range	-10℃~50℃	
Humidity Range	0~95%	
Altitude	3000m	
Battery Cluster (Cabinet) Features		
Model	ZR-EP100-02	
Chemistry	LiFePO4	
Rated Voltage	460.8Vdc	
Rated Energy	96.7kWh	
Size(W*H*D)	2991mm ×2591mm×2438mm	
Weight	4.7t-6.7t	
Batteries Connection	12 sets of ZR-FE38210-1235R1 in series	
Energy Converter Features		
Qty of Battery Cluster(s)	1 or more	2 or more
Model	ZR-BP50-02	ZR-BP100-02



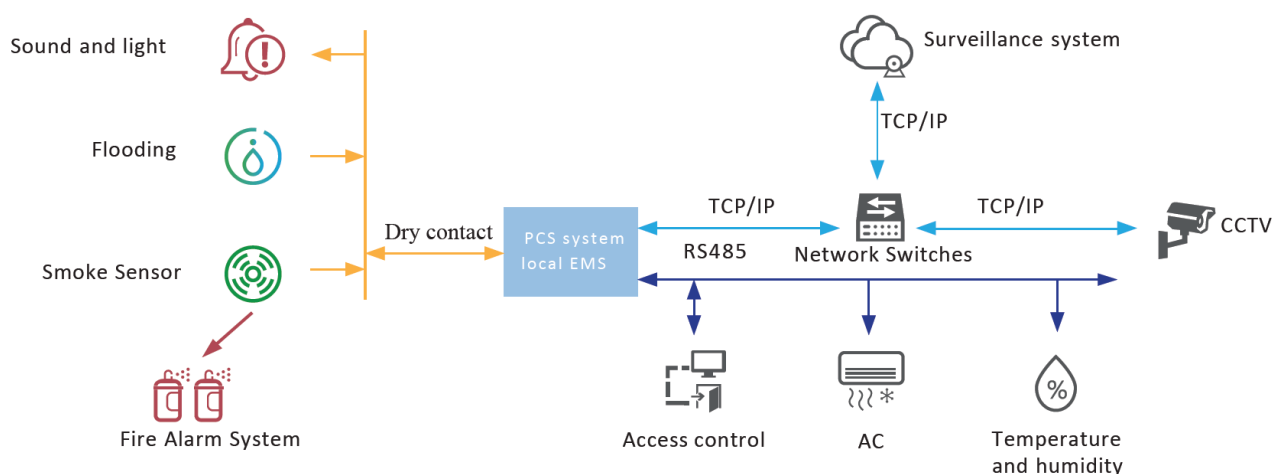
Battery Voltage Range	250~520V	
Maximum DC Current	130A	260A
PV Voltage Range	520~900V	
PV Maximum Current	220A	440A
Connection	3P4S	
Power Factor	-1~1	
Communication	RS485,CAN,Ethernet	
Isolation	Power-line Frequency Isolation	
Certifications	CE LVD,IEC 62109	
	EMC, AS/NZS61000	
	AS4777	

3.4.2. Environment Specifications

No.	Items	Parameters
1	Charging Temperature Range	0°C~45°C
2	Discharging Temperature Range	-10°C~55°C
3	Best Operating Temperature Range	15°C~35°C
4	Storage Temperature Range	0°C~45°C
5	Transport Temperature	-40°C~45°C
6	Humidity	5%RH~95%RH
7	Altitude	0~4000m

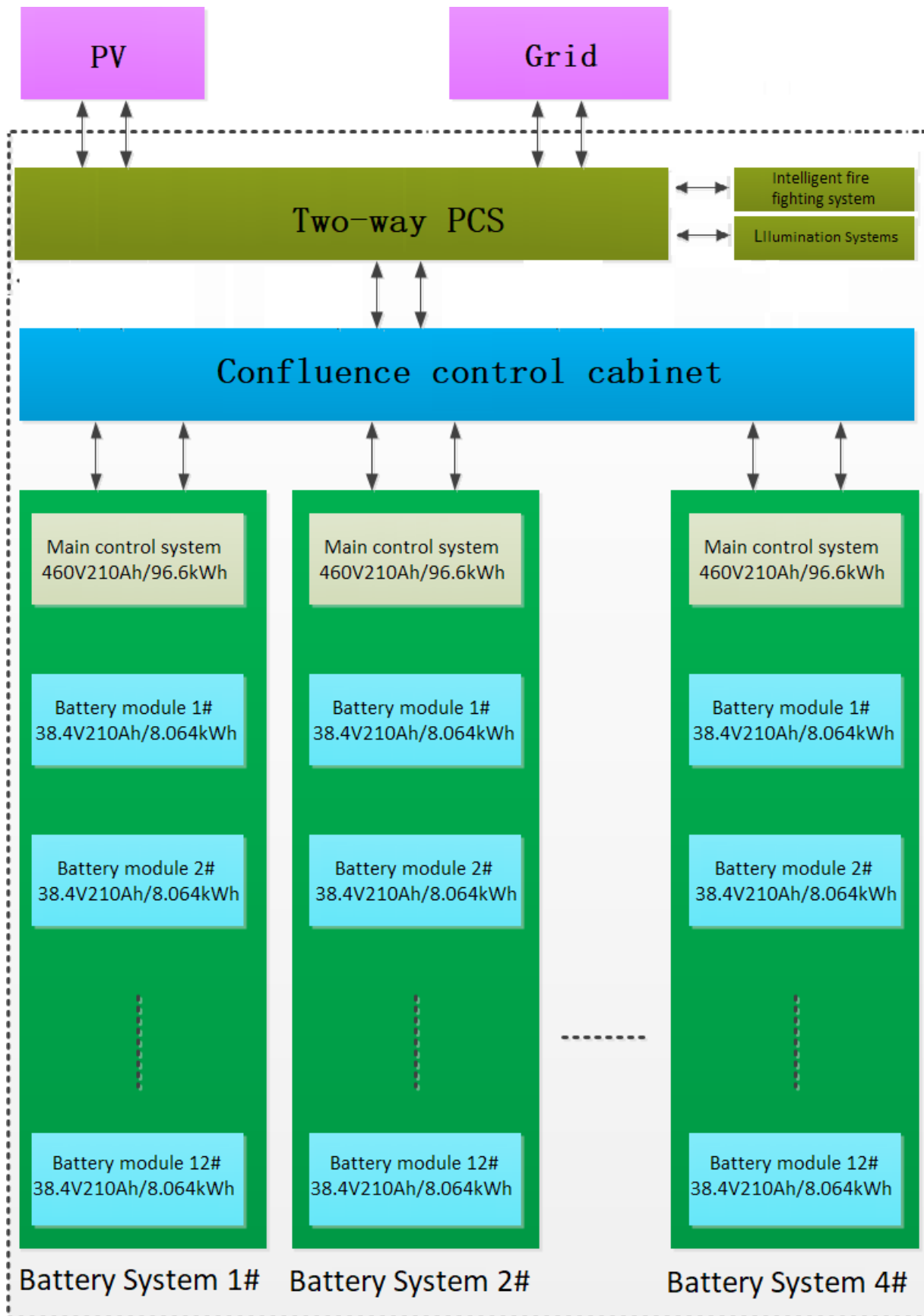
4. System Schematic

4.1、 Security System





4.2、 Electrical Schematic





5. Product Application

