

**750KWH 640v1200Ah
Energy Storage Design of
Container**

Electric Car Parts Company

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Technical parameters

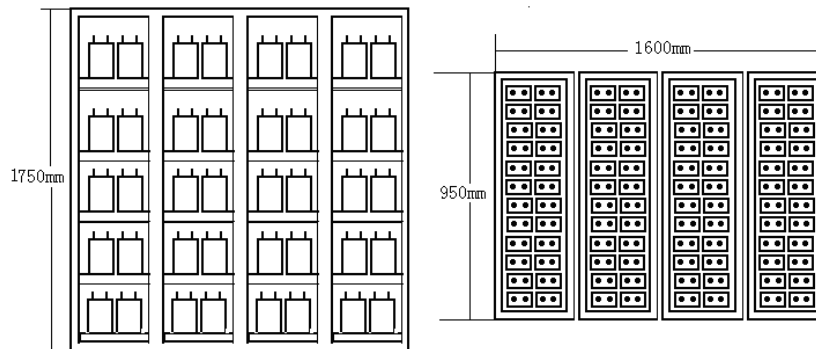
No	Items	Parameters	Remark	
1	Normal capacity	200Ah@ 0.3C discharging		
2	Minimal Capacity	210Ah@0.3C Discharging		
3	Nominal Voltage	3.2 V		
4	Internal Resistance	≤1mΩ		
5	CC-CV (Constant Current -Constant Voltage)	Standard Charging Current	50A	
		Maximum Charging Current	200A	
		Maximum Charging Voltage	3.65V	
6	Discharging	Continuous Discharging Current	600A	
		Maximum Discharging Current	1000A	
		Discharging Cut-off Voltage	2.5V	
7	Charging Time	Nominal Charging	4h	Reference Value
		Quick-acting Charging	1h	
8	SOC	SOC : 10%~90%		
9	Operation Thermal Ambient	Charging	0°C ~ 45°C	
		Discharging	-20°C ~ 55°C	
10	Storage Thermal Ambient	Short-term	-20°C ~ 45°C	
		Long-term	-20°C ~ 20°C	
11	Storage Humidity	<70 %		
12	Battery weight	Abt.6.65±0.05kg		
13	Single cell size (L*W*H)	80*182*238 mm±1mm		
14	Shell material	Flame retardant plastic shell		

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Energy Storage Battery Pack

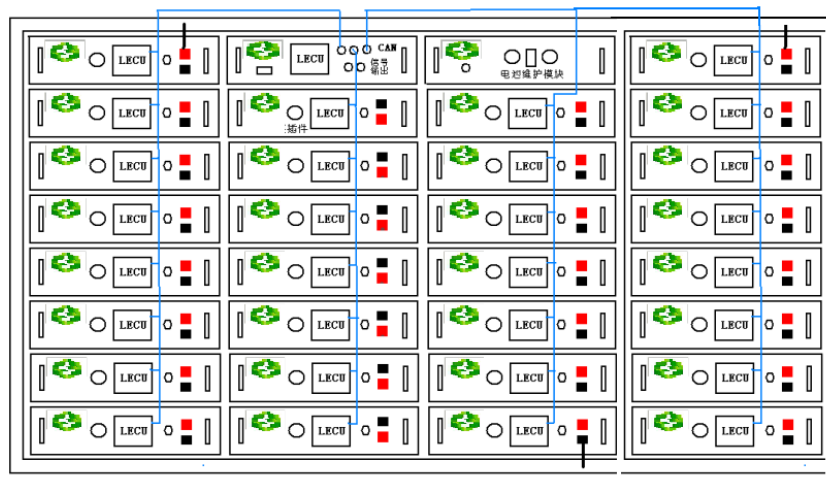
lifepo4 battery	3.2V / 200 AH
Cell quantities	Every battery pack consists of 216 series 2 parallel cells, 432 cells in every pack, and 4 pack, 1728pcs of cells in total
Rated voltage	691V (216S)
Voltage range	DC 540V ~ DC 777V
Rated discharging current	250A (Adjustable based on detail condition)
Battery shelf	4 battery cabinet for every battery pack. Battery Cabinet Size: L1600 mm * W 950 mm * H1750 mm

Battery arrangement



主视图

俯视图



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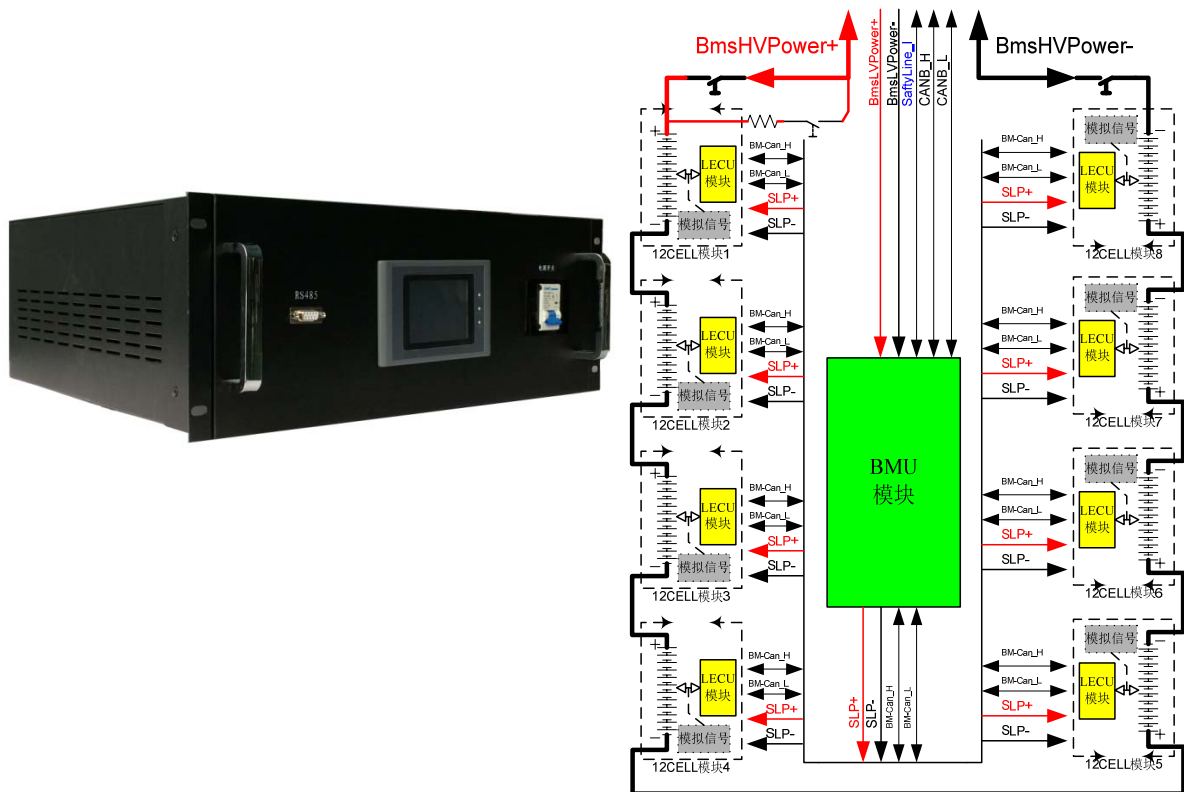
BATTERY PACK



Battery Bank Arrangement with racks



3、 BMS functions and technical specifications



BMS is composed by one master control box, one strong current control box, and 21 LECU collection boxes.

- 1). To achieve real-time monitoring battery operation: the total voltage, the total current, SOC, running status, battery temperature, battery fully managed.
- 2). To estimate status of charge (SOC)
- 3). Battery safety: against battery overcharge, over-discharge; battery status real-time monitoring, issue disable request timely, etc.
- 4). To achieve a battery fault diagnosis and security protection: Including battery fault diagnosis
- 5). A self-test and self-diagnosis function: diagnosis and treatment of all types of BMS failure
- 6). Managing batteries for a longer life, maintaining the battery SOC within a reasonable range, and implementing appropriate management strategies based on user conditions
- 7). Leakage monitoring to ensure electrical system safe and reliable
- 8). A functions of data to display, record and process etc.
- 9) System consists of a master controller and one high voltage controller, five (12S) sub-controller,

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and two (8S) sub-controller.

BMS technical parameters

Capacity	1200Ah
SOC Range	0.2~100%
Rated Voltage	640V (200S)
Operating Voltage Range	DC500 V ~ DC730V
Single cell Voltage	2.5V~3.65V
Rated charging current	300A
Maximum Allowable Charge Current	600A
Rated Discharge Current	200A
Maximum Allowable Discharge Current	400A
Batteries Operating Temperature	-20°C~55°C
Working Temperature of Controller	-20°C~+65°C
SOC Estimation accuracy	<5%
Single Cell Number	1200 bunches (200S6P)
Measuring Range of Single Cell Voltage	0~4.5V , accuracy: ±5mV
Total Voltage Measurement Range	DC 20V~DC 1000V; accuracy: ±1.6V
Total Current Measurement Range	0.22 ~ 100A; accuracy: ±0.5A
Insulation Resistance Range	1MΩ~500MΩ; accuracy: ±0.5MΩ
Temperature Testing	Every LECU control one way
Temperature range	-20°C~150°C; accuracy: ±2°C (0~80°C)
Balancing current (Passive)	2.5A

Installed with the battery pack, the BMS (Battery Management System) can detect the battery pack voltage, temperature, current, capacity and other battery pack parameters, take real-time condition monitoring and fault analysis, realize online connection with the central control monitoring & dispatching system and container monitoring system through the CAN BUS, and optimally control the whole battery pack charge & discharge management.

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4. Equipped with two 150kWh inverter (DC/AC PCS)

The system uses PCS hybrid inverter and full digital control technology, designed on the base of IGBT-based SVPWM rectifier, bidirectional DC-DC conversion and other advanced technology. The good thing can supply uninterrupted power to the load. This is a practical, high reliability high-tech product in the new energy area.

- (1) Charging function
- (2) Discharging function
- (3) Alarm Function
- (4) Touch-screen Display Function

Through human-machine interface (HMI), the touch-screen displays the voltage, current, and work status collected from system. Moreover, the reason can be viewed what caused the alarm by touching the screen, besides the operation of the switch and other information. In addition, starting and stopping the system is also realizable through the HMI.

(5) Protection function

1). AC voltage protection:

When device on the AC voltage is abnormal (overvoltage, undervoltage, miss-phase), conducted shutdown protection.

2). Battery voltage abnormal protection:

When the battery voltage is abnormal (overvoltage or undervoltage), conducted shutdown protection.

3). Short circuit protection:

When a short circuit fault, the device shut down automatically and timely.

4). Device overtemperature protection: Over the specified temperature degrees, system shutdown protection. As the temperature decreases, the device runs reply.

5). Lightning protection: Have overvoltage protection function with lightning.

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150KW Inverter Technical Parameters

Inverter input	Inverter Power Capacity	200kW
	Dc bus Max. Operating Voltage	650VDC
	Input Power	380VAC±10%; 3P
	Input Frequency	50Hz/60Hz
DC input	DC Input Voltage Range of PV and Accumulator Cell	350VDC~750VDC
Output	Rated Power Output Capacity	150kW
	Output Voltage	380-415VAC; 3P
	Output Frequency	50HZ
	Output Waveform	Sine wave
	Output Voltage Regulation Accuracy	<2%
	(THDu) Output voltage distortion	<3% Under linear balancing load
Display and communication	Display Type	Color touch-screen
	Communication interface	RS485/Ethernet
Environment	Temperatures	-10°C ~ 40°C
	Relative Humidity	0~95% (No condensation)
	Altitude	≤1000m
	Size	

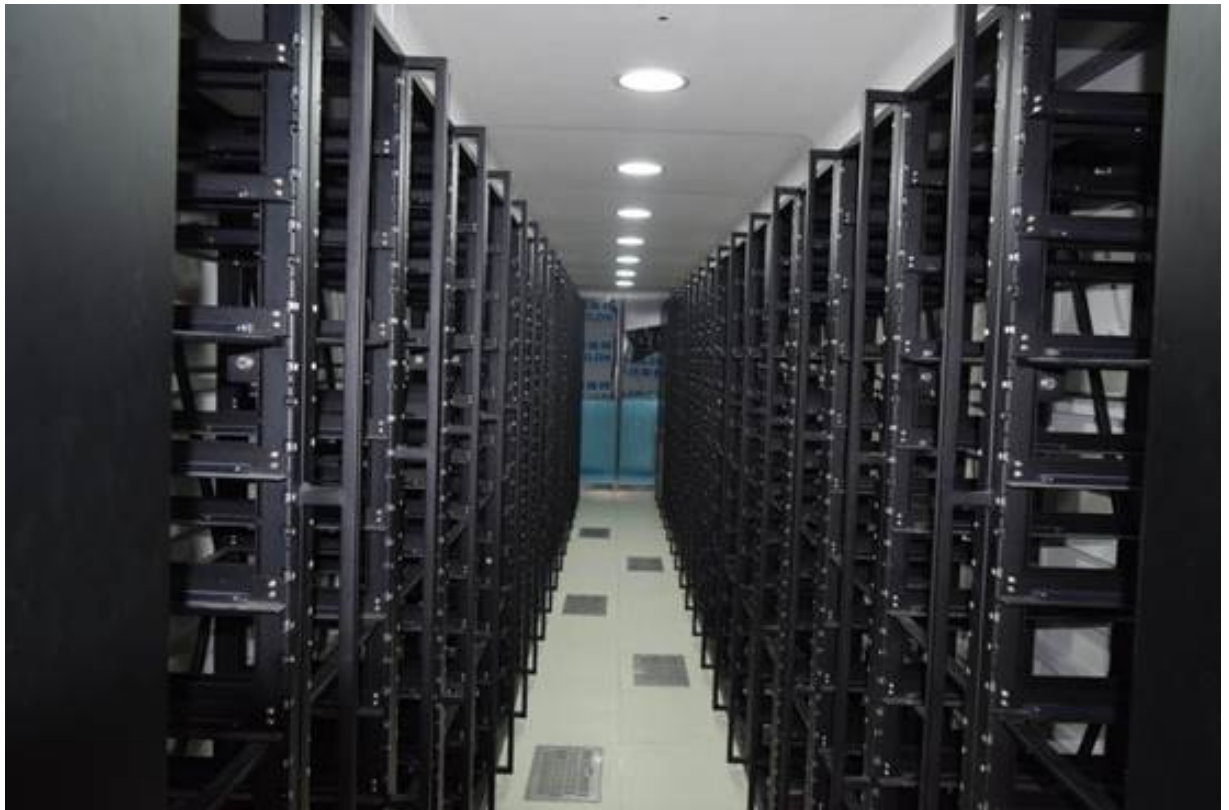


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6. 750kwh Battery Storage system pictures for ref.



Container Inside



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Container outside



Shipping



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7. System Components

No.	Item	Qty
1	Battery Pack 3.2V /100Ah	1200 PCS
2	BMS	3sets
3	Battery Module	60 sets
4	Battery Cabinets	3 sets
5	DC controller cabinet	1 set
6	200KW AC-DC Chargers	1 Set
7	150KW DC-AC Central Inverters	2 Sets
8	Master Computer	1 set
9	Monitoring software	1 set
10	40ft containers	1 set