



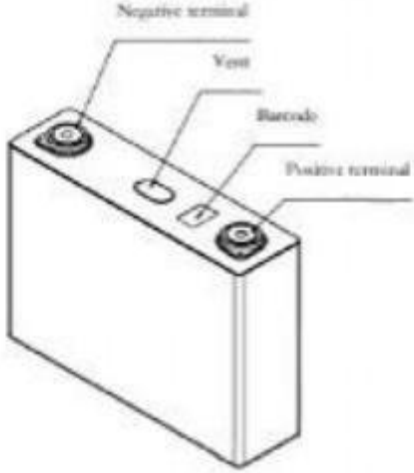
Rechargeable Lithium-Ion Battery Pack Specification

Model:51.2V100Ah

1. SCOPE

This specification describes the technical parameters and requirements of the rechargeable Lithium Ion battery pack designed & manufactured by Shandong Huison Electronics Technology Co.,Ltd.

2. BATTERY CELL BASIC SPECIFICATION

No.	Item	Standard		Remark
1	Nominal capacity	Rated Capacity	100 Ah	0.2C
2	Internal resistance	Maximum	0.4mΩ	AC 1 KHz
3	Nominal voltage		3.2V	
4	Cell weight		2.3Kg	
5	Charge limiting voltage		3.65V	
6	Discharge ending voltage		2.0V	
7	Charge current	Standard	50A	0.5C
		Maximum	100A	1C
8	Discharge current	Standard	50A	0.5C
		Max continuous	100A	1C
9	Operating temperature	Charge	0~60°C	
		Discharge	-20~60°C	
		Storage	-30~45°C	1month
			-20~35°C	6months
10	Cell picture			

File name: HS-PS-5KWH-S**3.BATTERY MANAGEMENT SYSTEM SPECIFCATION**

	Item		Default	Error
Cell	Cell Over-Charge Voltage Protection (COVP)	Protected voltage	3750mV	
	Cell Over-Charge Voltage Protection Release (COVPR)	Release Voltage	3500mV	
	Cell Over-Discharge Voltage Protection (CUVP)	Protected voltage	2400mV	
	Cell Over-Discharge Voltage Protection Release (CUVPR)	Release Voltage	2750mV	
	Over-Charge Voltage Protection (OVP)	Protected voltage	60V	
	Over-Charge Voltage Protection Release (OVPR)	Release Voltage	56V	
	Over-Discharge Voltage Protection (UVP)	Protected voltage	38.4V	
	Over-Discharge Voltage Protection Release (UVPR)	Release Voltage	44V	
Pack	Balance	Charge equalization		
	Size	300mm* 100mm*48mm		
	Picture			

3.1 Functional characteristics

- ⊕ High integrated analog front-end
- ⊕ Dual/ RS485/ CAN Communication
- ⊕ Multiple wake-up modes
- ⊕ High voltage accuracy (0~45℃+10mV)
- ⊕ Parameter adjustable setting
- ⊕ High current accuracy (≤2% @FS)
- ⊕ Low power consumption
- ⊕ 7-ways temperature detection (≤1℃)
- ⊕ Rapid shut down function(RPSD)
- ⊕ SOC estimation function(±5%)
- ⊕ Short circuit protection
- ⊕ Current limiting function(10A)
- ⊕ Support customized inverter protocol
- ⊕ Data storage and query function
- ⊕ Port upgrade function
- ⊕ Touch display
- ⊕ Auto DIP address setting
- ⊕ Alarm record



Expand Functions

Heating function (200W)

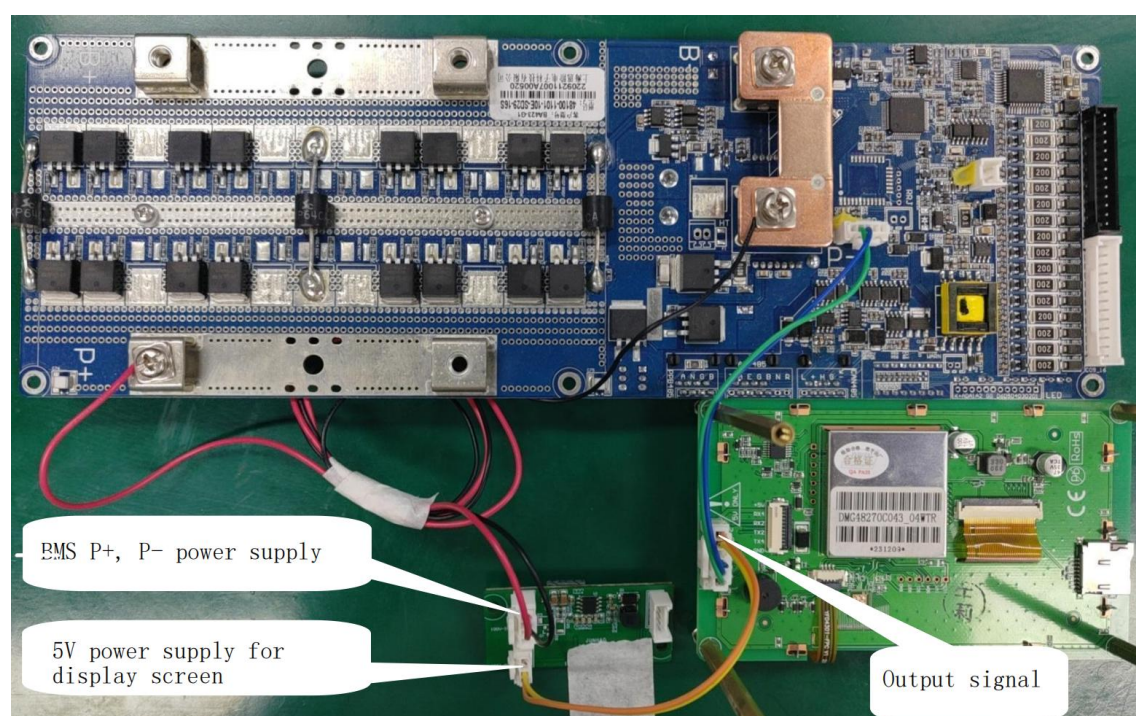
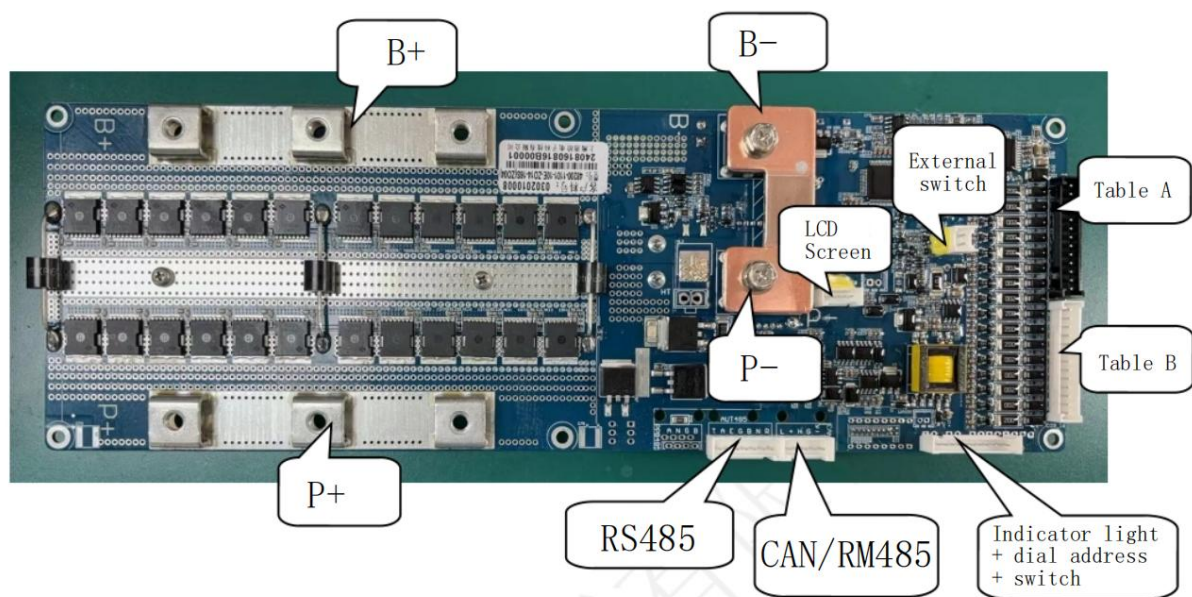
Adapter board (Communication、Reset、LED、Dial address extraction)

4.3'LCD

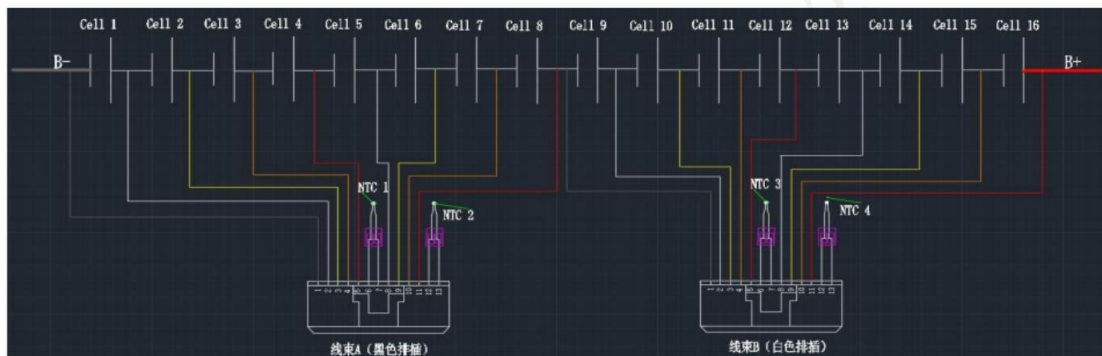
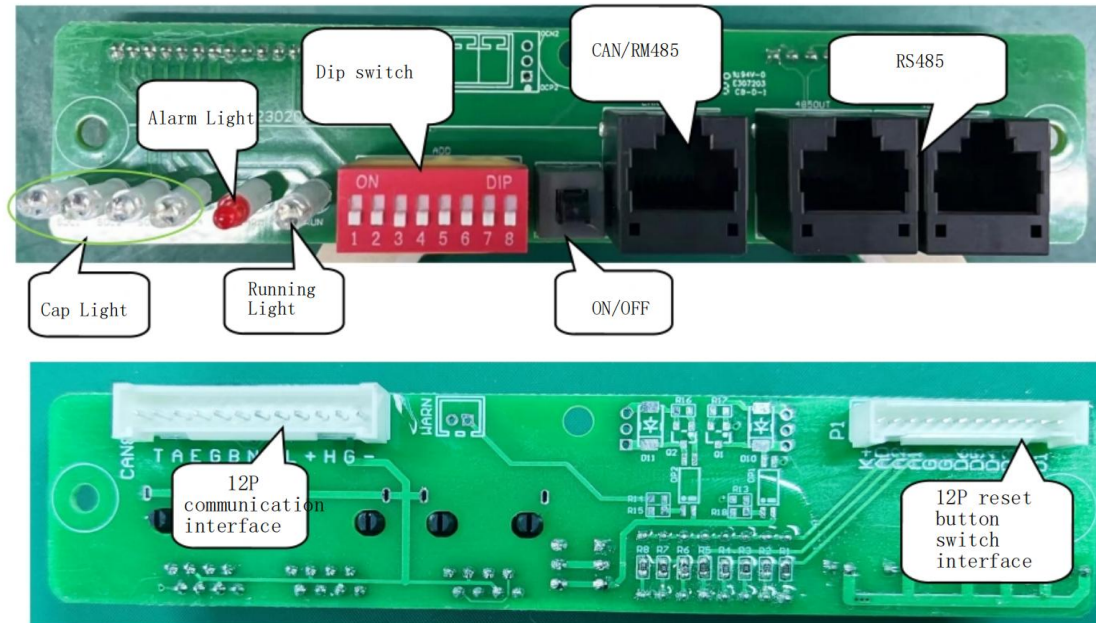
Bluetooth

3.2 BMS picture

3.2.1 Master panel and connect with screen



3.22. Front Panel BMS



Note: The actual product may differ from the picture, for reference only

Power on and off sequence

1) Power on in the following order: first connect the mainboard B-, then connect the wiring harness A and harness B in turn, then connect the mainboard B+, and finally connect P+ and P- to the charger or load (Note: the mainboard is in the off state after the wiring is connected. Press the reset button to turn on the power or close the external switch. Charging can also activate BMS).

2) The power off sequence is exactly the opposite: first disconnect the charger or load (Note: press the 6S reset button or disconnect the external switch, the flow light goes out once to shut down), then disconnect B+, disconnect harness B, harness A in turn, and finally disconnect B-.

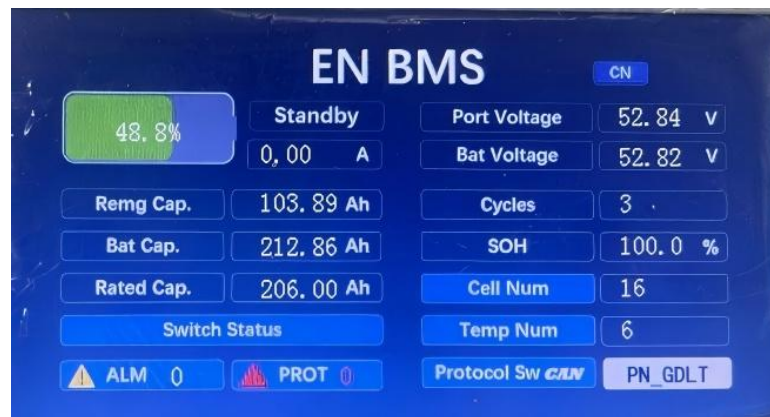
3) Input and output

When charging: the positive pole of the charger is connected to the "P+" of the protection board, and the negative pole of the charger is connected to the "P-" of the protection board.

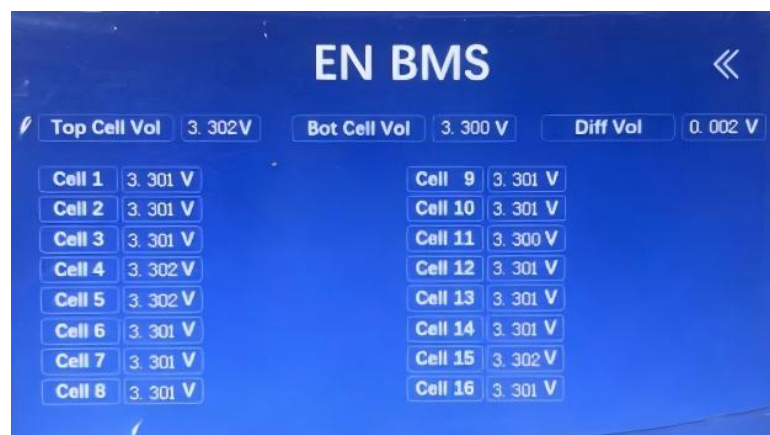
When discharging: the positive pole of the load is connected to the "P+" of the protection board, and the negative pole of the load is connected to the "P-" of the protection board.

3.23 Touch screen display

1.Home page



2.Cells info page



3.Choosing page



4.Inverter protocol selection page



File name: HS-PS-5KWH-S**3.24 Compatible inverter and protocol brands**

Support 40+ inverters potocol,you can check the inverters spec to choose the inverter protocol.

4. BATTERY PACK BASIC SPECIFICATION

No.	Item		Parameter
1	Rated Voltage		51.2V
2	Rated Capacity		100Ah (0.2C Discharge rate)
3	Cell configuration		16S1P
4	Energy		5120Wh
5	Discharge	current	50A
		Max continuous current	100A
		Cut off voltage	About 40V
6	Charge	Voltage	57.6±0.2V
		Current	≤50A
7	Resistance	Discharge connectors	≤20mΩ
8	Working Environment	Charging	0℃~+45℃
		Discharging	-20℃~+60℃
		Humidity	RH≤85%
9	Storage Environment	Temperature	0℃~40℃
		Humidity	RH≤50%,
10	Packing	Metal shell	
11	weight	≤46kg	
12	Size	(640*450* 170) ±2mm	
13	Other function	RS485/CAN	
14	Defensive function	Overcharge protection, overdischarge protection, temperature protection, balancing function, short circuit protection	
15	Other functions	Current limiting, active balancing, fast shutdown, Automatically match addresses , 300A fuse	
16	LCD	3.5 inch touch screen	
17	Paralleling no.	More than 40 modules	
18	Cycle times	6000 times continuously. (Capacity retention rate ≥80%)	

5. ACTIVE BALANCER

5.1、 Overview of balancer functions

Product features: fast balancing speed, high conversion efficiency, high balancing accuracy, good cost performance and high reliability.

1、 The active balancer is applicable to NCM lithium and LFP lithium. The voltage range of single

string battery: 2V-4.5V.

2、 Balance current: 3A (Definition: When the total battery pack discharges at 3A, remove one

of the batteries, the battery pack can still discharge at 3A, and the total voltage of the battery

pack remains basically unchanged) .

3、 Ability of Balancing: 1A/50mV(Definition: When the voltage difference between two batteries in one pack is 50mV, there will be 1A balancing current between the two strings)

4、 Balance efficiency: $\geq 92\%$.

5、 After the battery pack reaches voltage balanced, the voltage differences between any two

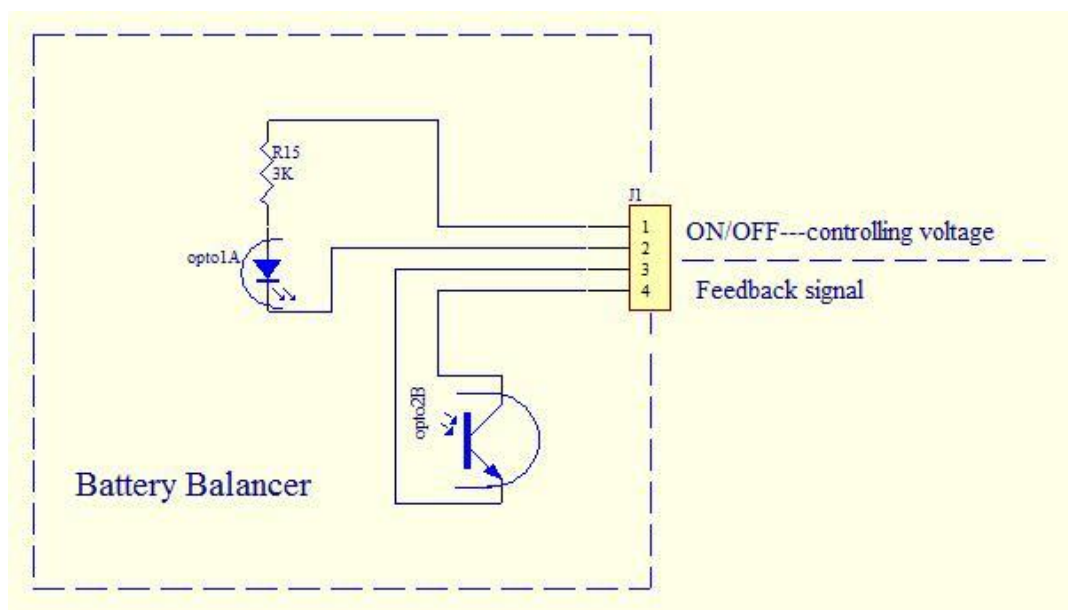
batteries is less than 5mV./

6、 Perfect and reliable protection function, without damaging the lithium battery under any circumstances.

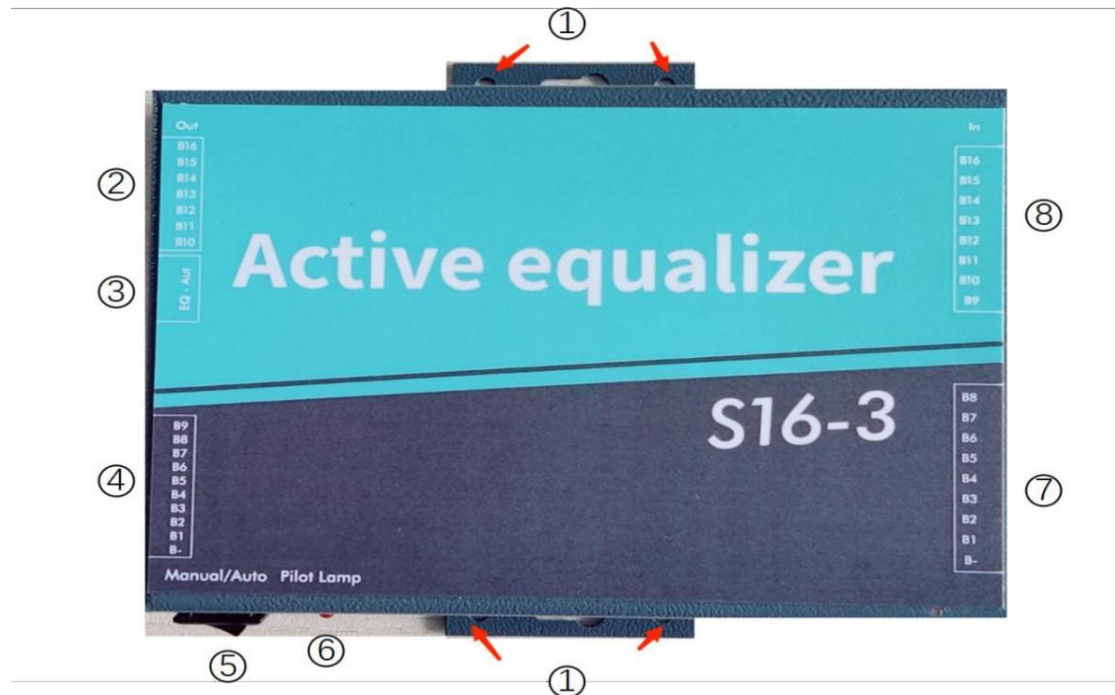
7、 Balancer can be controlled manually or automatically, and has working state feedback signal.

5.2、 Balancer ON/OFF automatic control

The internal circuit diagram of balancer related to automatic control and feedback signal is as follows:



6.ACTIVE BALANCER SHOW



1. Mounting hole

5. Auto/Manual switch

2. 8 pins sampling connector(white)

6. Indicator

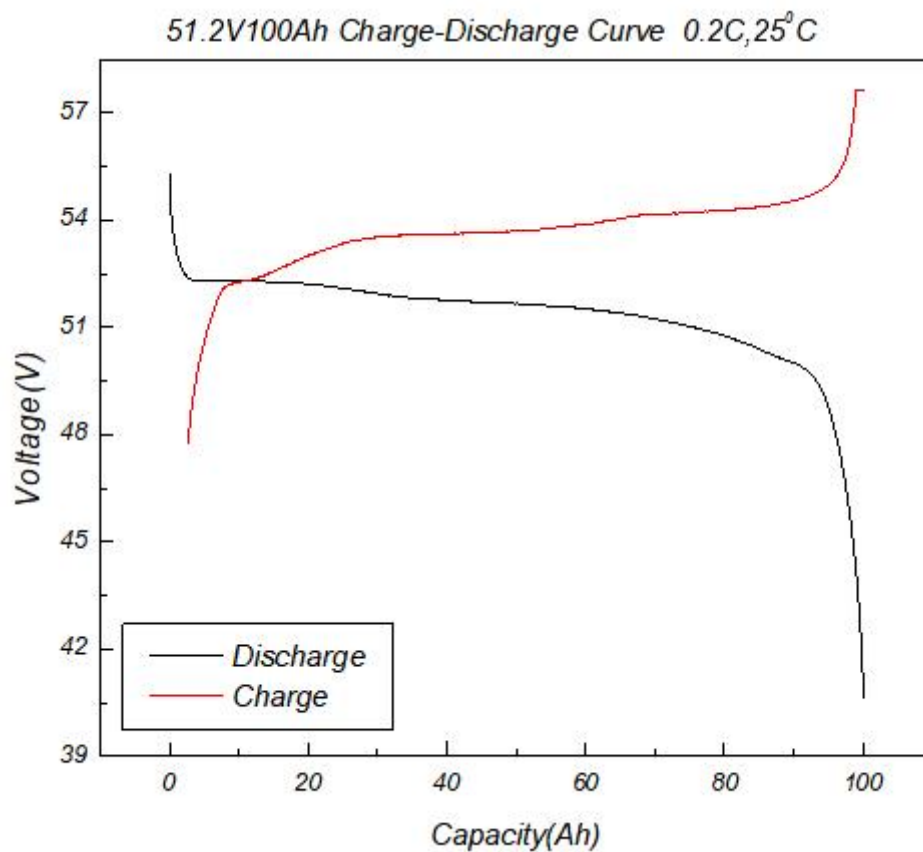
3. 4 pins sampling connector

7. 9 pins sampling connector

4. 10 pins sampling connector

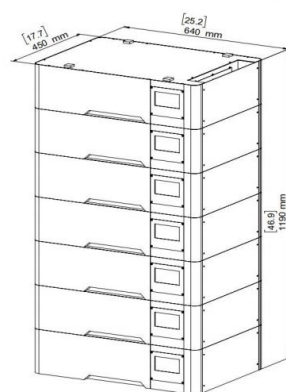
8. 8 pins sampling connector(Green)

7. CHARGE AND DISCHARGE CURVE



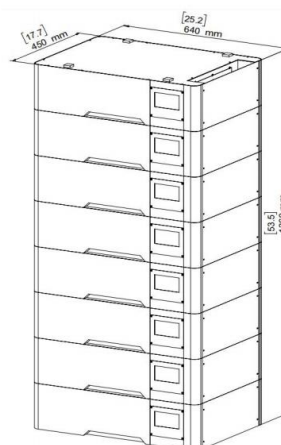
8.DIMENSIONS AND PHYSICAL DRAWINGS

35KWh Dimension

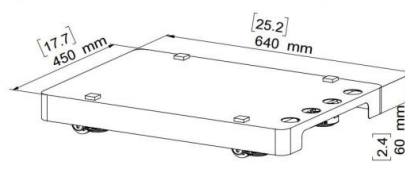
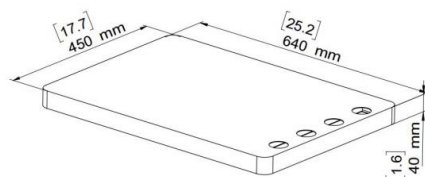


Top cover dimension

40KWh Dimension



Bottom base Dimension



Recommend capacities from 1 unit to 6 units.



9.CAUTION IN USE

To ensure proper use of the battery please read the manual carefully before using it

9.1 CHARGE AND DISCHARGE

-  Charge the battery with Lithium battery charger, standard voltage(57.6V), with CC/CV mode to charge the battery until current is 0.02C;
-  Discharge the battery with standard current 0.2C , continuous discharge to 40V or battery cut off;
-  Never use a modified or damaged charger;
-  Recharge the battery within 12 hours after using;
-  Do not leave battery in charger over 24 hours.

9.2 STORAGE

-  Store the battery in a cool, dry and well-ventilated area;
-  Store the battery in a 60% - 80% SOC;
-  The batteries shall be charged every 2 months during storage.

9.3 HAZARD WARNINGS

-  Do not expose to, dispose of the battery in fire, heating source;
-  Do not reverse charge the battery;
-  Avoid excessive physical shock or vibration;
-  Do not disassemble or deform the battery;
-  Do not immerse in water;
-  Do not use battery mixed with different manufacturers, type or model batteries;
-  Keep out of the reach of children;
-  Do not connect the batteries in serial and parallel.

9.4 DISPOSAL

-  Dispose of in accordance with local regulation.

10.PRODUCT LIABILITY

10.1. Our company guarantees that all indicators of the products will be strictly inspected before leaving the factory to ensure that the product qualification rate reaches 100%.

10.2. Our company guarantees that after the installation, and acceptance of the product, our company is responsible for free maintenance.

10.3. Under any of the following circumstances, free warranty will not be given, but reasonable paid services can be provided.

-  The warranty period has expired or the purchase certificate cannot be provided;
-  Damage caused by improper use and maintenance(especially water, falling);
-  Repairs or disassembles the product without authorization;
-  Product failure or damage due to irresistible disasters such as flood, fire, lightning strike and earthquake;
-  Other faults or damages not caused by the product itself.

11.CONTACT US:

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