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NO.： WBY-AHSJ-CN2022060502

Product Development Agreement

12.8V200Ah Battery System Specification

A0 Version

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Anhui Lvwo Recycling Energy Technology Co., Ltd.	Contract NO.:WBY-AHSJ-CN2022060502

Description of changes to technical documents

Changes to successive versions of this document are set out below:

NO.	Version No.	Description of changes	Changing Time	Modifier
1	A0	Initial version	2022-06-05	Li Jian

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I. Battery system design reference technical document

GB 2894 Safety Signs（neq ISO 3864：1984）

GB 16179 Guidelines for the Use of Safety Signs

GB 8897.4-2008 Primary Batteries (Part 4) Safety Requirements for Lithium Batteries

GB 21966-2008 Safety Requirements for Lithium Primary Cells and Batteries in Transportation

GJB 4477-2002 General Specification for Lithium-ion Battery Packs

GB 24155-2009 Electric Motorcycles and Electric Mopeds Safety Requirements

GBT 24156-2018 Electric Motorcycles and Electric Mopeds Performance Testing Methods

GBT 24157-2017 Electric Motorcycles and Electric Mopeds Range and Residual Power Indicator Testing Methods

GBT 24158-2009 General Technical Conditions for Electric Motorcycles and Electric Mopeds

GBT 24158-2018 General Technical Conditions for Electric Motorcycles and Electric Mopeds

GBT 36672-2018 Lithium-ion Batteries for Electric Motorcycles and Electric Mopeds

II. Supply list

NO.	Version	Unit	Quantity	Notes
1	12.8V200Ah Battery	pcs	1	
2				
3				

III. Battery system usage requirements

1. Battery system operating external ambient temperature requirements: charging and discharging： charging -10℃～60℃, discharging -20℃～60℃；
2. Battery system working external environment humidity requirements:

10%≤humidity≤90%RH;

3. Battery system operation state try to maintain more than 20% SOC;
4. When the battery system is not in use for a short period of time, it is required to maintain more than 60% SOC and be stored in a dry, clean and well-ventilated warehouse at

   5℃～45℃.
5. During the loading process of the battery pack, it is required to carry and put it gently, and strictly prevent it from falling, rolling and impacting;
6. The battery pack shall not be placed upside down or lying down in the storage state; it is strictly prohibited to expose the battery pack to sunlight, rain or water for a long time;
7. Ensure that the battery system in the operation or storage state away from flammable and explosive substances, high temperature environment;
8. It is strictly prohibited to force the battery system to operate under the state of short circuit, overcharge and high temperature alarm;
9. Strictly prohibit customers from disassembling the battery system without permission;

IV. Battery parameters

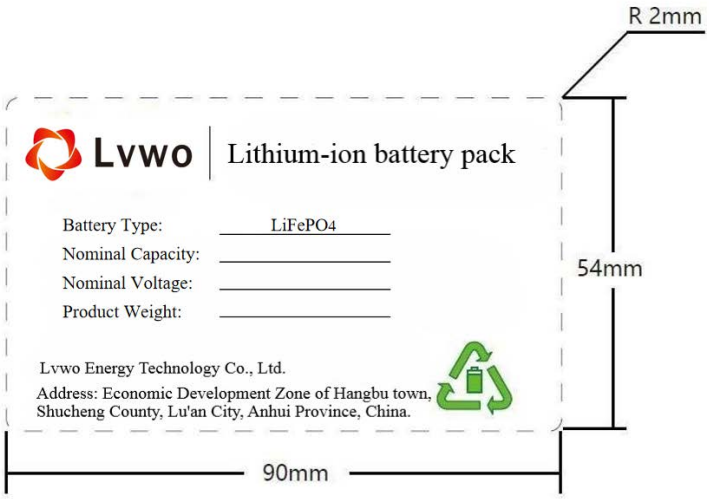
NO.	Item	Parameters	Notes
Battery system parameter			
1	Rated voltage	12.8V	4 series
2	Battery pack voltage range	10～14.6V	Per cell 2.5V-3.65V
3	Rated capacity	200Ah	
4	Total energy	2560Wh	
5	SOC range	10%-100%	
6	Charging and discharging capacity efficiency	≥90%	
7	Standard charging current（A）	≤120	Recommended 0.6 C and below
8	Standard discharging current（A）	≤160	Recommended 0.8 C and below
9	Max. continuous charging and discharging current (A)	150	BMS Max. continuous current
10	Total weight	20.9kg	
11	Ambient relative humidity	10%-90%	
12	Shell material	Plastic (Black)	
13	Series-parallel system	4S34P	
14	Charging and discharging ambient temperature	Charging -10℃～60℃, Discharging -20℃～60℃	
15	Battery dimension（mm）	532*207*215mm	Tolerance ±2
16	Input method	M8 Terminal	
17	Output method		
18	Communication mode	Bluetooth	

V. Schematic diagram of product external dimensions



Schematic diagram of pack

VI. Label



VII. Specifications and parameters of BMS

7.1. Electrical parameter

Item	Content	Criterion

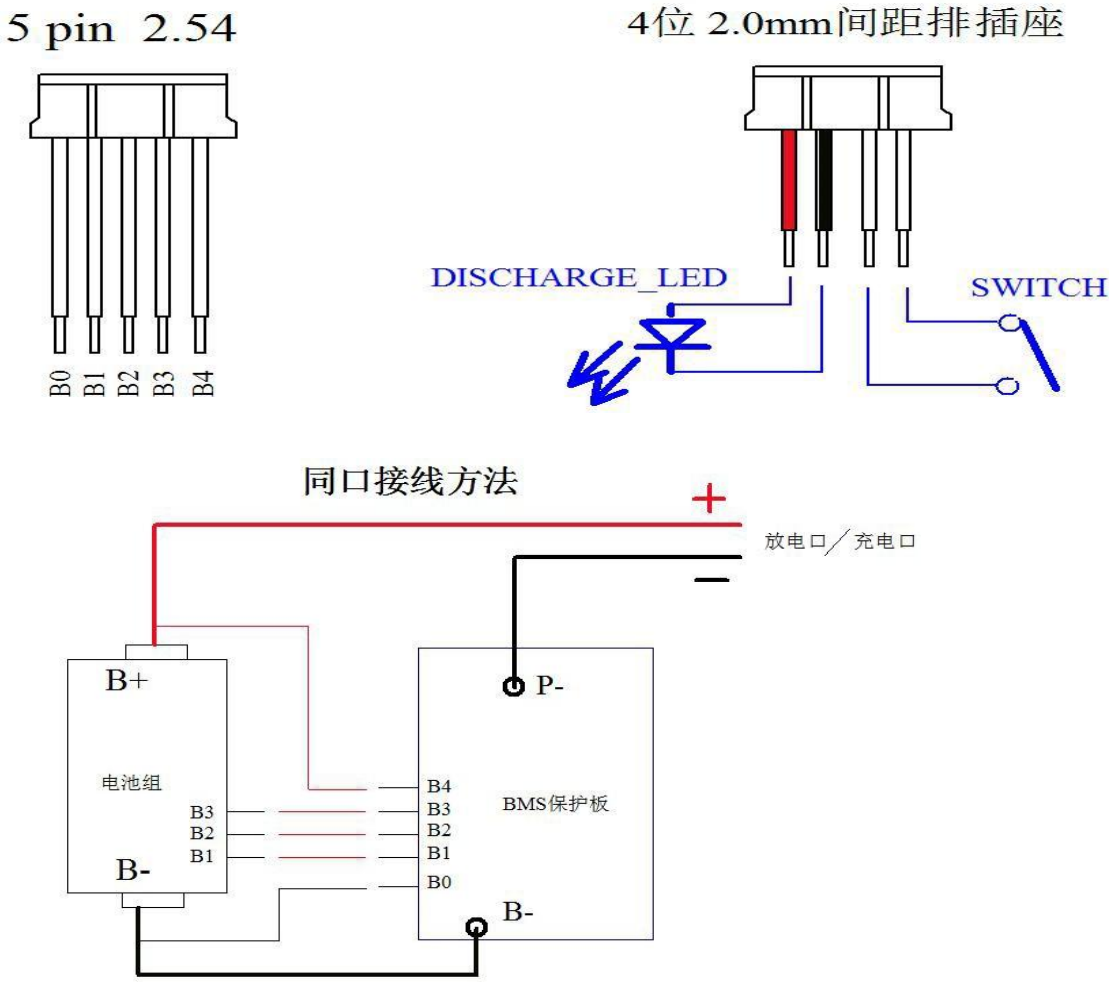
Over charge Protection	Over charge detection voltage	3.65
	Over charge detection delay time	2S
	Over charge release voltage	3.5
Over discharge protection	Over discharge detection voltage	2.5
	Over discharge detection delay time	3 S
	Over discharge recovery voltage	2.9
Charge over current protection	Charge over current protection current	170A
	Charge over current detection delay time	0.5 S
Discharge Over current protection	Discharge over current protection current1	170 A
	Discharge over current detection delay time 1	9 S
Discharge over current protection	Discharge over current protection current 2	500 A
	Discharge over current detection delay time 2	3 S
Short-circuit protection	Short-circuit current	920 A
	Short protection detection delay time	300 u S
	Detection condition	The battery B+ of P- connection thread of
	Short release condition	Remove load
Interior Resistance	Main loop electrify resistance	2 mΩ (100A measurement)
Current consumption	Current consumption in normal operation	16 mA Type
Current consumption	Current consumption in normal operation	3.3mA Type
Current	Current consumption in dormancy operation	0.5 uA Type

consumption		
Charging high temperature protection		65℃
Charging high temperature protection recovery		55℃
Charging low temperature protection		0 ℃
Charging low temperature protection recovery		5 ℃
Discharging high temperature protection		75℃
Discharging high temperature protection recovery		65℃
Discharging low temperature protection		-40 ℃
Discharging low temperature protection recovery		-30 ℃
Balanced turn-on voltage		3.45V
Balanced turn-on differential pressure		20 mV
Balanced current		270mA
Rated discharging current		150A

7.2. Bluetooth connection to the mobile interface Android and Apple IOS

Please refer to APP

7.3. The connection of BMS



VIII. Charger

1. Dedicated Lithium Iron Phosphate Battery Charger
2. Max. Input Voltage ≤ 14.6 V
3. Max. Continuous Output Current ≤ 9 A

Notes: To prevent overcharging due to charger or BMS failure, the charger shall cut off first at the end of charging. The charger sets the output voltage to a maximum charging limit of 3.65V per cell. Once the total battery pack voltage reaches 14.6V, the charger stops the charging process.