No. 1 Dongzhendong Er St., State-level Torch Hi-Tech
Industrial Development Zone, Zhongshan, Guangdong, China.
TEL: +86-0760-85312791, EMAIL: sales@tycc.cn, WEB: tycc.cn,

Technical Specification for Lithium Ion Battery products

电池组型号/Model	48100P-15S1P
电池组标称电压/Nominal Voltage	48V
电池组标称容量/Capacity	100Ah
电芯类型/Chemistry	LiFePO4

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目　录/Catalogue

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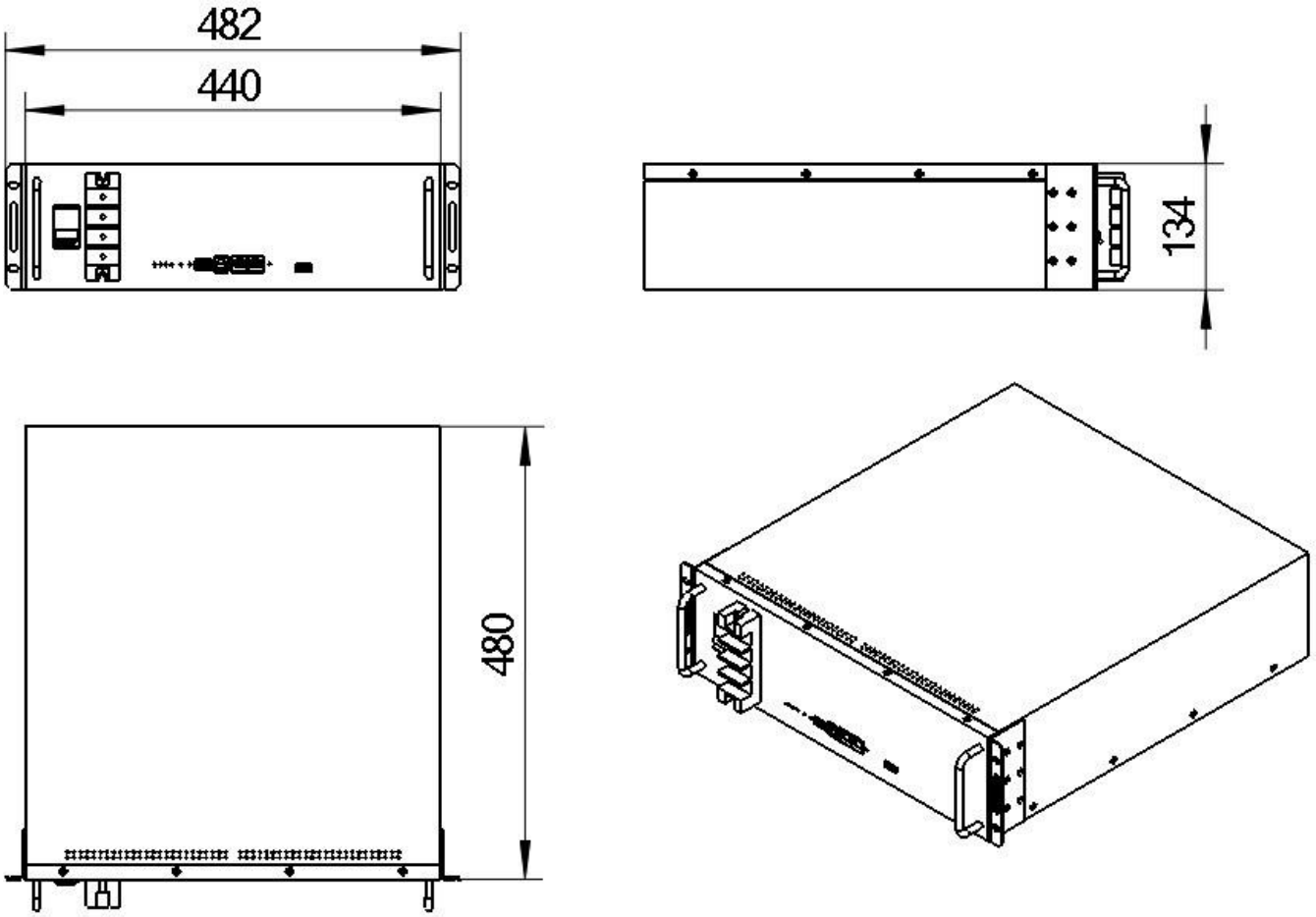
1.0 前 言 /Preface

本标准描述了通信后备电源,包括：电池模组的产品规格、型号、外型尺寸、电池技术参数 要求、BMS 技术参数要求、安全可靠性能要求、包装要求以及其它要求。

This standard describes the communication backup power supply, including the product specification, model, external dimension, battery technical parameter requirements, BMS technical parameter requirements, safety and reliability performance requirements, packaging requirements and other requirements of the battery module

2.0 产品尺寸/Product size



公差：±1mm

3.0 电池技术参数要求/Battery technical parameter requirements

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3.1.2	额定容量 Rated capacity	100Ah	0.33C/25 ℃
3.1.3	标称电压 Nominal voltage	48V	15 串 15 Series
3.1.4	机箱尺寸 Chassis dimensions	见尺寸图 See dimension drawing.	
3.1.5	机箱材质 Chassis material	Q235	
3.1.6	防水等级 Waterproof grade	IP30	
3.1.7	可充电最高电压 Charging maximum voltage	54.75V	3.65V/pcs
3.1.8	可放电最低电压 Discharge minimum voltage	37.5V	2.5V/pcs
3.1.9	标准充电电流 Standard charging current	0.2C	
3.110	最大持续充电电流 Max continuous charging current	1C	100A
3.1.11	标准放电电流 Standard discharge current	0.2C	
3.1.12	最大持续放电电流 Max continuous discharge current	1C	100A
3.1.13	循环寿命 Cycle life	≥4000 cycles	0.2C /25℃/80%DOD
3.1.14	重量 Weight	大约 44KG	（以实际产品重量为准） (based on the actual weight of the product)
3.1.15	放电工作温度范围 Discharge operating temperature range	-20～+65℃	/
3.1.16	储存温度 Storage temperature	-20～+50℃	SOC40～60%
3.1.17	相对湿度 Relative humidity	5～95%	无凝结,电池系统正常工作 No condensation, battery system working properly
3.1.18	海拔 Height	＜3600m	/
3.1.19	保质期 Quality guarantee period	3 年 3 years	3 年免费保修维护 3-year free warranty maintenance
3.1.20	出货带电量 Shipment with electricity	20%~50%SOC	48V-52.8V
3.1.21	通信口 communication port.	RS 232*1+RS 485*2	详见 6.0 说明 See the 6.0 description for details
3.1.22	SOC LED 灯显示 SOC LED lamp display	4 个 LED 绿灯 4 LED green	
3.1.23	运行、告警 LED 灯显示 Run, alarm LED light display	LED 灯绿、红各 1 个 LED light （green，red）	
3.1.24	防盗功能 Anti-theft function	Yes	
3.1.25	通信协议	Modbus Protocol for	TP-BA378-PH15S100A-3.2.2.bin

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	Communicating protocol	RS485	
3.1.26	充电限制电流 Charging limit current	20A	启动条件： ≥110A
3.1.27	反接保护 Reverse protection	Yes	
3.1.28	拨码开关 Dial switch	6 位二进制 6 bit binary	
3.1.29	显示屏 Display screen	无 NC	
3.1.30	干接点 Dry connect	有 Yes	定义： 干接点 1：PIN1 to PIN2:常闭，SOC≤20%，断开； 干接点 2：PIN3 to PIN4:常闭，电池触发防盗而锁定，断开。 Definition: Dry contact 1：PIN1 to PIN2: normally closed, SOC≤20%%, open; Dry contact 2：PIN3 to PIN4: normally closed, battery triggered anti-theft and locked and disconnected.
3.1.31	蜂鸣器 Buzzer	有 Yes	
3.1.32	空气开关 Breaker	有 Yes	
3.1.33	告警记录保存 Alarm log	10000 events	

3.2 电芯技术要求				
3.2.1	电芯材料化学体系 Chemical system of Cell		磷酸铁锂 Lithium iron phosphate	/
3.2.2	电芯外壳材质 Cell shell material		铝合金 Aluminum	/
3.2.3	电芯规格/型号 Specification / model of Cell		GSP50160119F/100Ah	/
3.2.4	容量 capacity		100Ah	/
3.2.5	交流内阻 IR		极差＜0.5mΩ extreme difference < 0.5m Ω	
3.2.6	重量 Weight		（以实际产品重量为准） (based on the actual weight of the product)	
3.2.7	最大持续充/放电倍率 Max continuous charge / discharge rate		1C	
3.2.8	循环寿命 Cycle life		≥4000 cycles	0.2C /25℃ /100%DOD
3.2.9	外观 Surface	电芯表面 Cell surface	无污染/脏污、漏液、划/刮伤、鼓包（胀气） No pollution / dirt, liquid leakage, scratch / scratch, bulging (flatulence)	/

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3.2.10	配组 Make sets	容量极差 Capacity difference	≤ 2%	同组电芯参数极差 The parameters of the same group of electric Cells are very different.
		电压极差 Voltage range	≤ 20mV	
		内阻极差 IR difference	≤0.5m Ω	

3.3 产品使用说明
Description of product use

3.3.1	最多只允许 0～15 个模块并联使用，不允许串联使用。 Only 0 ≤ 15 modules are allowed in parallel, not in series.
3.3.2	不同材料化学体系，不同批次电池及设计技术参数不能一起组装使用。 Different material chemical systems, different batches of batteries and design technical parameters can not be assembled and used together.

序号 NO	指标项目 Indicator item		默认值 Windows default	可设 Optional	备注 Remarks
1	单体过充保护 Cell overcharge protection	单体过充告警电压 Cell overcharge alarm voltage	3600mV	可设 Optional	
		单体过充保护电压 Cell overcharge protection voltage	3650mV	可设 Optional	
		单体过充保护延时 Cell overcharge protection delay	1.0S	可设 Optional	
	单体过压保护解除 Removal of Cell over voltage protection	单体过充保护解除电压 Cell overcharge protection Relief voltage	3300mV	可设 Optional	
		容量解除 Capacity Relieve	SOC＜96%	可设 Optional	
		放电解除 Discharge release	放电电流＞1A Discharge current> 1A		
2	单体过放保护 Cell over discharge protection	单体过放告警电压 Cell over discharge alarm voltage	2750mV	可设 Optional	
		单体过放保护电压 Cell over discharge protection voltage	2500mV	可设 Optional	
		单体过放保护延时 Over discharge protection delayarge protection delay	1.0S	可设 Optional	
	单体过放保护解除 Release of Cell over discharge protection	单体过放保护解除电压 Cell over discharge protection Relief voltage	3100mV	可设 Optional	
		充电解除 Discharge of charge	接入充电器可激活 The access charger may be activated.		
	总体过充保护 Overall overcharge protection	总体过充告警电压 Overall overcharge alarm voltage	54V	可设 Optional	
		总体过充保护电压 Overall overcharge protection voltage	54.75V	可设 Optional	

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3		总体过充保护延时 Overall over-charge protection delay	1.0S	可设 Optional	
	总体过压保护解除 Overall over voltage protection lifted	总体过充保护解除电压 Overall over-charge protection release voltage	49.5V	可设 Optional	
		容量解除 Capacity Relieve	SOC＜96%	可设 Optional	
		放电解除 Discharge release	放电电流＞1A Discharge current> 1A		
4	总体过放保护 Overall over discharge protection	总体过放告警电压 Overall over amplifier alarm voltage	41.25V	可设 Optional	
		总体过放保护电压 Overall over discharge protection voltage	37.5V	可设 Optional	
		总体过放保护延时 Overall overplay protection delay	1.0S	可设 Optional	
	总体过放保护解除 Over discharge protection is lifted.	总体过放保护解除电压 Overall over discharge protection Relief voltage	46.5V	可设 Optional	
		有充电时解除 When there is a charge, it is unloaded.	接入充电器可激活 Access charger can be activated		
5	充电过流保护 Charging over current protection	充电过流告警电流 Charging over current alarm current	105A	可设 Optional	
		充电过流保护电流 Charging over current protection current	110A	可设 Optional	
		充电过流保护延时 Charging over current protection delay	1.0S	可设 Optional	
	充电过流保护解除 Discharge of charging over current protection	自动解除 Automatic release	1min 后自动解除 Automatic release after 1min		
		放电解除 Discharge release	放电电流＞1A Discharge current＞1A		
6	放电过流 1 级保护 Discharge over current level 1 protection	放电过流 1 级保护电流 Discharge over current 1 stage protection current	110A	可设 Optional	
		放电过流 1 级保护延时 Discharge over current stage 1 protection delay	1.0S	可设 Optional	
7	放电过流 1 级保护解除 Discharge over current level 1 protection release	自动解除 Automatic release	1min 后自动解除 Automatic release after 1min		
		充电解除 Charge release	充电电流＞1A Charging current＞1A		
8	放电过流 2 级保护 Discharge over current 2 stage protection	放电过流 2 级 保护电流 Discharge over current 2 stage protection current	150A	可设 Optional	
		放电过流 2 级 保护延时 Discharge over current 2 stage protection delay	100mS	可设 Optional	

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9	放电电流 2 级保护解除 Discharge current stage 2 protection release	自动解除 Automatic release	1min 后自动解除 Automatic release after 1min		
		充电解除 Charge release	充电电流＞1A Charging current＞1A		
10	短路保护 Short-circuit protection	短路保护功能 Short circuit protection function	有/YES		
		短路电流 Short-circuit current	放电持续电流的 3～4 倍 Three to four times the continuous discharge current.		＜3S
		短路保护解除 Short-circuit protection release	有充电时短路保护解除 Release of short circuit protection in case of charging		
			负载移除后将自动解除 When the load is removed, it is automatically unloaded		
11	MOS 高温保护 MOS high temperature protection	MOS 过温告警温度 MOS over-temperature alarm temperature	95℃	可设 Optional	
		MOS 过温保护温度 MOS over temperature protection temperature	115℃	可设 Optional	
		MOS 保护解除温度 MOS protection release temperature	85℃	可设 Optional	
12	电芯温度保护 Cell temperature protection	充电低温告警温度 Charging low temperature alarm temperature	5℃	可设 Optional	
		充电低温保护温度 Charging low temperature protection temperature	0℃	可设 Optional	
		充电低温保护解除温度 Charging low temperature protection release temperature	5℃	可设 Optional	
		充电高温告警温度 Charging high temperature alarm temperature	45℃	可设 Optional	
		充电高温保护温度 Charging high temperature protection temperature	50℃	可设 Optional	
		充电高温保护解除温度 Charging high temperature protection release temperature	45℃	可设 Optional	
		放电低温告警温度 Discharge low temperature alarm temperature	-15℃	可设 Optional	
		放电低温保护温度 Discharge low temperature protection temperature	-20℃	可设 Optional	
		放电低温保护解除温度 Discharge low temperature protection release temperature	-10℃	可设 Optional	
		放电高温告警温度 Discharge high temperature alarm	60℃	可设 Optional	

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		temperature			
		放电高温保护温度 Discharge high temperature protection temperature	65℃	可设 Optional	
		放电高温保护解除温度 Discharge high temperature protection release temperature	60℃	可设 Optional	
13	环境温度 Ambient temperature	环境低温告警温度 Ambient low temperature alarm temperature	-15℃	可设 Optional	
		环境低温保护温度 Environmental low temperature protection temperature	-20℃	可设 Optional	
		环境低温保护解除温度 Environmental low temperature protection release temperature	15℃	可设 Optional	
		环境高温告警温度 Ambient high temperature alarm temperature	60℃	可设 Optional	
		环境高温保护温度 Environmental high temperature protection temperature	65℃	可设 Optional	
		环境高温保护解除温度 Environmental high temperature protection release temperature	60℃	可设 Optional	
14	均衡功能 Equilibrium function	均衡开启电压 Balanced opening voltage	3500mV	可设 Optional	
		开启压差 Open pressure difference	30mV	可设 Optional	
15	消耗电流 Consumed current	工作自耗电电流 Working self-consumption current	≤45mA(带屏) ≤45mA (with LCD)		
			≤35mA（不带屏） ≤ 35mA (without LCD)		
		低功耗模式电流 Low power mode current	≤250uA		
16	容量默认设置 Capacity default settings	低电量告警 Low-power alarm	SOC＜5%	可设 Optional	
		容量过低恢复 Low capacity recovery	SOC≥20%	可设 Optional	
		满电量设置 Full power setting	100Ah	可设 Optional	
17	休眠功能 Dormancy function	休眠电压 Dormancy voltage	3150mV	可设 Optional	
		延迟时间 Delay time	5min	可设 Optional	

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No.	Items	Technical Specification
1	充电性能	标准充电模式：在环境温度 25±2℃的条件下，以 0.33C 充电，当电池组电
	Charging performance	压达到充电限制上限电压时，改为恒压充电，直到充电电流小于或等于 0.033C 停止充电。 Standard charging mode: at the ambient temperature of 25 ± 2 ℃ , charge at 0.33C, when the battery pack voltage reaches the upper limit voltage of charging limit, change to constant voltage charging until the charging current is less than or equal to 0.033C to stop charging.
2	放电性能 Discharge Performance	将电池按标准充电模式充好电后，开路搁置 0.5h，再以 0.33C 放电至下限限制电压，要求放电容量不小于标称容量。 After charging the battery according to the standard charging mode, open the open circuit for 0.5h, and then discharge it to the lower limit limit voltage with 0.33 C, and the discharge capacity is required to be not less than the nominal capacity.
3	循环寿命 Cycle life	在环境温度 25±2℃的条件下，以要求电流进行充电，当电池组电压达到充电上限限制电压时，改为恒压充电，直到充电电流小于或等于 0.02C,静置 0.5h 后， 要求电流放电至 80%DOD，重复上述步骤循环充放电，当连续三次放电容量小于初始容量 80%时寿命为终止，要求循环寿命≥要求循环次数。 At the ambient temperature of 25 ± 2 ℃, charge at the required current. When the battery voltage reaches the upper limit limit voltage of charging, change to constant voltage charging until the charging current is less than or equal to 0.02c, After standing for 0.5h, the current shall be discharged to 80% DOD, and the above steps shall be repeated for cyclic charging and discharging. When the discharge capacity for three consecutive times is less than 80% of the initial capacity, the life shall be terminated, and the cycle life shall be ≥ the required cycle times.
4	容量保存率 Capacity preservation rate	在环境温度 25±2℃的条件下，以 0.33C 充电，当电池组电压达到充电上限电压时，改为恒压充电，直到充电电流小于或等于 0.033C；将电池开路放置在 20±5℃条件下 28 天后，以 0.33C 放电至下限限制电压，要求放电容量是标称容量的 80%以上。 Under the condition of ambient temperature 25 ±2 ℃, charge at 0.33C, when the battery pack voltage reaches the charging upper limit voltage, change to constant voltage charging until the charging current is less than or equal to 0.033C. After 28 days of placing the battery open circuit at 20 ± 5 ℃ for 28 days, the discharge capacity is more than 80% of the nominal capacity when the battery is discharged to the lower limit voltage at 0.33C.
5	高温性能 High temperature performance	在环境温度 25±2℃的条件下，以 0.33C 充电，当电池组电压达到充电上限限制电压时，改为恒压充电，直到充电电流小于或等于 0.033C。电池组静置 10 分钟上后，将其放入 60℃±2℃的高温箱中静置 4h 后，以 0.33C 电流放电至下限限制电压，电池组的放容量应不低于标称容量的 90%。试验结束后，将其取出在环境温度 25℃±2℃的条件下静置 12h，目测其外观无变形、无爆裂。 At the ambient temperature of 25 ±2 ℃, charge at 0.33C, when the battery pack voltage reaches the charging upper limit voltage, change to constant voltage charging until the charging current is less than or equal to 0.033C. After the battery pack is put in a high temperature box at 60 ℃ ±2 ℃ for 4 hours, the battery pack is discharged to the lower limit voltage at 0.33C current, and the discharge capacity of the battery pack should not be less than 90% of the nominal capacity. At the end of the test, it was taken out at 25 ℃ ±2 ℃ for 12 h, and there was no deformation and no burst.
6	低温性能 Low temperature performance	在环境温度 25±2℃的条件下，以 0.33C 充电，当电池组电压达到充电上限限制电压时，改为恒压充电，直到充电电流小于或等于 0.033C。电池组静置 10 分钟上后，将其放入-20℃±2℃的低温箱中静置 6h 后，以 0.33C 电流放电至下限限制电压，电池组的放电容量应不低于标称容量的 60%；试验结束后，将其取出在环境温度 25℃±2℃的条件下静置 12h，目测其外观无变形、无爆裂。说明：单体放电保护电压 2.0V，电池组放电保护电压 30.0V。 When the ambient temperature is 25 to 2 & deg; C, charging is performed at 0.33 C, and when the battery pack voltage reaches the charging upper limit limit voltage, the

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		constant voltage charging is changed until the charging current is less than or equal to 0.033C. after the battery pack is allowed to stand for 10 minutes, the battery pack is put in a low-temperature box of -20 DEG C to 2 DEG C for 6 hours, the discharge capacity of the battery pack should not be less than 60 percent of the nominal capacity after standing for 6 hours in a low-temperature box of -20 DEG C to 2 DEG C, and after the test is finished, The product was allowed to stand for 12 h at ambient temperature of 25 & deg; C and 2 & deg; C, and the appearance was observed to be free from deformation and no bursting. Description: Cell.
7	过充 Overcharge	电池标准充电后，在 20±5℃条件下搁置 1h。然后在同一温度下，以 0.33C(A)电流恒流恒压充电至 2 倍电池组标称电压，当电池温度达到稳态或者将至环境温度时结束实验。要求电池组不起火，不爆炸。 After standard charging, the battery was put on hold for 1 h at 20 ±5 ℃. Then, at the same temperature, the battery pack is charged at constant current and constant voltage of 0.33C (A) to twice the nominal voltage of the battery pack, and the experiment is completed when the battery temperature reaches steady state or will reach the ambient temperature. The battery pack is required not to catch fire or explode.
8	过放 Over discharge	电池标准充电后，在 20±5℃条件下搁置 1h。然后在同一温度下，以 0.33C(A)电流放电至 0V。要求电池组不起火，不爆炸。 After the battery standard is charged, the battery is put on hold for 1 h at 20-5 ℃. Then, at the same temperature, the current was discharged to 0 V at 0.33 C (A). The battery pack is required to be out of fire and no explosion.
9	热冲击 Thermal shock	电池放于热箱中，温度以 5±2℃/min 的速率升至 130±2℃并保持 30min。要求不起火，不爆炸。 The battery was placed in a hot box and the temperature rose to 130±2° c at a rate of 5±2° c/min and maintained for 30 min. require no fire, no explosion.
10	短路 Short	电池标准充电后，在 20±5℃条件下搁置 1h。将电池经外部短路 10min，外部线路电阻应小于 100mΩ。要求不起火，不爆炸。 After standard charging, the battery was put on hold for 1 h at 20 ±5 ℃. When the battery is short-circuited through the external circuit for 10 min, the resistance of the external line should be less than 100m Ω. No fire, no explosion.
11	BMS 保护告警功能 BMS protection alarm function	过充保护、过放保护、高温保护、低温保护、过流保护、均衡功能、容量告警、压差告警。 Over-charge protection, over discharge protection, high temperature protection, low temperature protection, over-current protection, equilibrium function, capacity alarm, pressure difference alarm.
12	BMS 跌落试验 BMS drop test	测试条件：1.5m 高度，20mm 水泥地板测试方法：将保护板固定在专用测试盒内进行 6 个面的自由跌落实验，每个面的跌落次数为 1 次，跌落之后进行外观、机械和电性能检查。 test conditions:1.5m height,20mm cement floor test method: the protective board is fixed in the special test box to carry out the free drop test of 6 faces, the number of drops of each face is 1, after the drop, the appearance, mechanical and electrical performance inspection is carried out. 测试工具：跌落测试盒。 Test tool: Drop test box. 测试标准：保护板各项功能正常，BMS 板无变形，内部元件无脱落。 Test standard: all the functions of the protective plate are normal, the BMS plate is not deformed, and the internal components do not fall off.
13	BMS 振动实验 BMS vibration experiment	测试条件：振幅：0.75mm；振频：10Hz、30Hz。 Test conditions: amplitude: 0.75mm, vibration frequency: 10Hz, 30Hz. 测试方法：将保护板放入振动箱。水平和垂直方向各振动 1 小时（其中以 10Hz 频率振动半个小时，30Hz 频率振动半个小时）之后取出，然后进行外观和电性能检查。

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		Test method: put the protective plate into the vibration box. After one hour of horizontal and vertical vibration (including half an hour of vibration at 10Hz frequency and half an hour of vibration at 30Hz frequency), the appearance and electrical performance were checked. 测试工具：振动台。 Test tool: shaking table. 测试标准：保护板各项功能正常，内部元件无脱落。 Test standard: the function of the protective board is normal and the internal components are not shedding.
14	BMS 高低温冲击试验 BMS high and low temperature impact test	测试条件：低温-40℃，高温+85℃。 The test conditions are as follows: low temperature-40 ℃, high temperature 85 ℃. 测试方法：将保护板置于高温箱内持续 45 分钟后，在 15 秒内迅速转入低温箱并持续 45 分钟， 循环 8 次；试验结束后将样机从温度冲击箱中取出，并恢复 2 小时后进行外观、机械和电性能检查。 Test methods: after placing the protective plate in the high temperature box for 45 minutes, the protective plate was quickly transferred to the low temperature box within 15 seconds and lasted 45 minutes for 8 cycles. After the test, the prototype was removed from the temperature impact box and restored for 2 hours for inspection of appearance, mechanical and electrical properties. 测试工具：恒温恒湿试验箱。 Test tool: constant temperature and humidity test box. 测试标准：BMS 板各项功能正常，BMS 无变形。 Test standard: BMS board function is normal, BMS has no deformation.

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6.0 其它要求及说明Other requirements and instructions

6.1 产品面板布局及说明（以实际产品布局为准）Product panel layout and description (subject to the actual product layout)

6.2 包装箱及填充材料：纸箱和珍珠棉。Packing box and filling material: carton and pearl cotton。

6.3 包装、运输、贮存Packaging, transportation and storage

◆包装Packing

☆方式：■中性纸箱（国内）Neutral carton (domestic) □危包纸箱（出口）Dangerous package carton (export) □中性木箱（单组或不足托盘）Neutral wooden box □木托+盖（批量货柜出口），注：木箱/木托为免检免蒸熏Wooden support + cover (export of bulk containers), note: wooden case / wooden support is inspection free and steam free.

☆每个电池组都应有外包装，且应附有产品使用手册、合格证、配件（如需）等。包装好的产品应放在干燥、防尘、防潮的包装箱内，危险品包装箱外应标明产品电压、容量、数量、毛重/净重、LOGO、电池序列号，中性包装箱不含以上内容。Each battery pack shall be provided with an outer package and shall be attached with a product manual, certificate of conformity, accessories (if necessary), etc. The packed products shall be placed in dry, dust-proof and moisture-proof packing boxes, and the voltage, capacity, quantity, gross / net weight, logo and battery serial number of the
products shall be indicated outside the dangerous goods packing boxes. The neutral packing boxes do not contain the above
contents.

☆防震、防压措施：电池模组外部六面需填充防震材料。Shockproof and pressure proof measures: the six sides of thebattery module shall be filled with shockproof materials.

☆最高层数：满足运输要求，不超过5层。Maximumnumber of floors: meet thetransportation requirements, no more than 5 floors.

☆防水、防散、搬运：电池模组套尼龙袋、打包带打紧、托盘。Maximum number of floors: meet the transportation requirements, no more than 5 floors.

◆ 运输Transportation

☆认证：□CE□UL1642□UN38.3□CB□MSDS■其他

☆电池组应包装成箱进行运输，在运输过程中应防止剧烈震动、冲击或挤压，防止日晒雨淋，可使用汽车、火车、 轮船、飞机等交通工具进行运输。Thebattery pack shall be packed in boxes for transportation. During the transportation, it shall be prevented from violent vibration, impact or extrusion, and from sun and rain. It can be transported by vehicles such as cars, trains, ships, airplanes, etc.

◆ 贮存 Storage

☆电池组通常以40%～60%荷电状态储存在环境温度为-20℃～50℃，相对湿度不大于 85%的清洁、干燥、通风的室内，应避免与腐蚀性物质接触，应远离火源及热源。The battery pack is usually stored in a clean, dry and ventilated room with an ambient temperature of - 20 ℃ ~ 50 ℃ and a relative humidity of no more than 85% under 40% - 60% of the state of charge. The battery pack should be kept away from corrosive substances and fire and heat sources.

☆从制造之日起，每贮存3个月应按0.33～0.5C 电流补电30～60min。From the date of manufacture, the battery shall be charged at the current of 0.33-0.5c for 30-60min every 3 months of storage.