

Battery Specification

电池说明书

MODEL

型号: 51.2V230Ah--16S1P

Nominal Capacity

标称容量: 230Ah

Project number

立项编号: _____

Total Page

文件页数: 7 页

Registered 编制	Checked 审核	Approved 批准

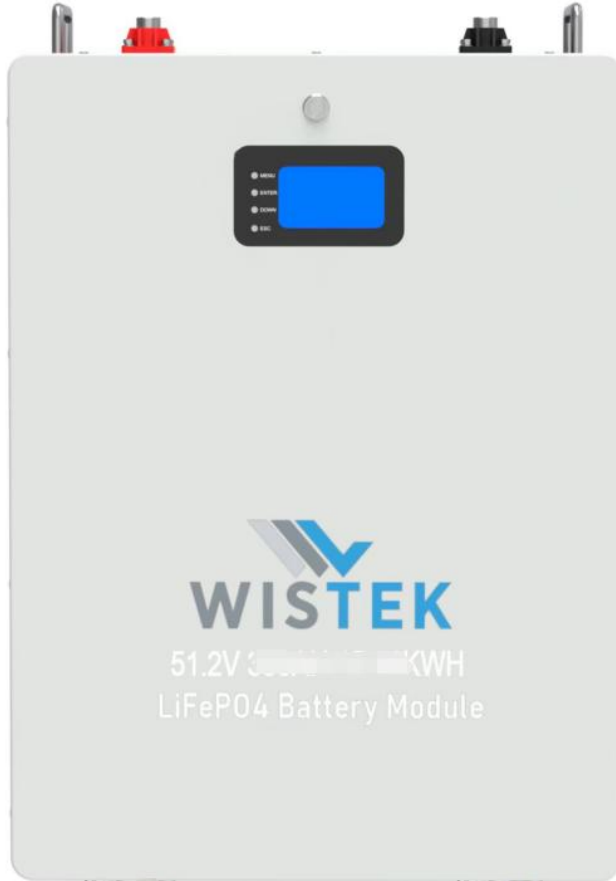
1.Initial Size 初始尺寸



Product Size产品尺寸: 不包含固定架尺寸


T (Total length) (长度)	600.0±2.0	W(Width) (宽度)	440.0±2.0	H(Height) (高度)	250.0±2.0
L (lead wire length) 引出线长	/	terminal 端子	M8	Power 功率	10240Wh
PCM Protection Board PCM 保护板	JBD-AP21S001-L16S-200A 嘉百达-铁锂16S200A			Electric cell 电芯	亿纬 230Ah 亿纬 230Ah
Appearance 外观	51.2V200Ah- White sheet metal shell 51.2V200Ah- 白色钣金壳				

2. Battery picture 电池图片



3. Product Specifications 产品规格参数

No. 序号	Catalog 目录	Specification Requirements 规格要求
3.1	Typical capacity 典型容量	230Ah (0.1C discharge) 230Ah (0.1C 放电)
	Minimum capacity 最小容量	230Ah (0.1C discharge) 230Ah (0.1C 放电)
3.2	Nominal voltage 标称电压	51.2V
3.3	Shipping Voltage 出货电压	51~54V
3.4	Standard charging voltage 标准充电电压	CC/CV,23A,57.6-58.4V (0.1Ccharging) CC/CV,23A,57.6-58.4V (0.1C 充电)
3.5	Standard discharge 标准放电	CC,23A,40V (0.1Cdischarge) CC,23A,40V (0.1C 放电)

 深圳市慧智慧科技有限公司 Shenzhen Wisdom Science And Technology Co., Ltd.	Number 编号:	Valid Date 生效日期: 2023.10.25
	Edition版本: A0	第 4 页 共 7 页

3.6	Charge cutoff voltage 充电截止电压	57.6-58.4V
3.7	Charge cutoff current 充电截止电流	0.01C 2.3A (At CV mode)
3.8	Discharge cut-off voltage 放电截止电压	40V
3.9	Charge time 充电时间	10-11 hours (standard charge) 10-11 小时(0.1C)
3.10	Fast charge/discharge current 快速充放电电流	130A (0.5C)
3.11	Maximum continuous charge/discharge current 最大持续充放电电流	200A (0.87C)
3.12	Recommended charge current 建议充电电流	23A (0.1C)
3.13	Maximum load/inverter power 最大负载/逆变器功率	10240W
3.14	Initial internal resistance 初始内阻	Max: ≤50mΩ
3.15	Weight 重量	(约): 净重 90 ±5Kg,
3.16	Operating temperature range 工作温度范围	1: Charging 0° C~50° C (32° F~122° F) 2: Discharge -20° C~60° C (-49° F~140° F) 3: Storage -10° C~50° C (-14° F~122° F) 4: Low temperature cut-off protection (charging) 0° C±4° C (32° F±39.2° F) 5: Low temperature cut-off protection (discharge) -20° C±4° C (-4° F±39.2° F) 1: 充电 0° C~50° C (32° F~122° F) 2: 放电 -20° C~60° C (-49° F~140° F) 3: 存储 -10° C~50° C (-14° F~122° F) 4: 低温切断保护(充电) 0° C±4° C (32° F±39.2° F) 5: 低温切断保护(放电) -20° C±4° C (-4° F±39.2° F)
3.17	Cycle life 循环寿命	>2000 cycles (100% DoD) 3000 cycles, 80% DoD >2000 个周期 (100%DoD) 3000 个周期, 80%DoD
3.18	Waterproof rating 防水等级	IP65
3.19	Appearance 外观	No scratches, deformation, oil, leakage, breakage 无划痕、变形、油污、漏液、破损
3.20	Terminal type 端子类型	M8

4. Basic parameters of protection board 保护板基本参数

	项目(Project)	规格(Specification)			单位(Unit)
		最小值 MIN	典型值 TYP	最大值 MAX	
过压和欠压保护 (Overvoltage and under voltage protection)	过充保护电压(Over voltage)	3.70	3.75	3.80	V
	过充保护延时(Over voltage delay)	1000	2000	3000	mS
	过充保护释放(Over voltage release)	3.55	3.60	3.65	V
	过放保护电压(Under voltage)	2.10	2.20	2.30	V
	过放保护延时(Under voltage delay)	1000	2000	3000	mS
	过放保护释放(Under voltage release)	2.50	2.60	2.70	V
	过放保护释放条件 (Under voltage release conditions)	充电恢复 (charge recovery)			
充电过流保护 (Overcurrent Charge)	充电过流保护值 (Overcurrent Charge protection value)	见下面过流保护值配置表 (See the configuration table of overcurrent protection value below)			
	充电过流延时 (Overcurrent Charge delay)	7	10	13	S
	充电过流释放条件 (Charge over current release conditions)	延时 32S 后自动恢复 (Automatic recover after a delay of 32S)			
放电过流保护 (Overcurrent Discharge)	一级放电过流保护值 (1th Overcurrent Discharge)	见下面过流保护值配置表(See the configuration table of overcurrent protection value below)			
	一级放电过流保护延迟 (1th Overcurrent Discharge delay)	7	10	13	S
	二级放电过流保护电流值 (2th Overcurrent Discharge)	见下面过流保护值配置表 (See the configuration table of overcurrent protection value below)			
	二级放电过流 2 保护延迟 (2th Overcurrent Discharge delay)	320	640	1280	mS
	放电过流保护恢复条件 (Overcurrent Discharge release)	延时 32S 后自动恢复 (Automatic recover after a delay of 32S)			
短路保护 (Short Circuit Discharge)	短路保护电流(Short circuit protection current)	见下面过流保护值配置表 (See the configuration table of overcurrent protection value below)			
	短路保护延迟时间 (Short circuit protection delay time)	200	400	800	uS
	短路保护恢复 (Short circuit protection recovery)	断开负载后延时 5s 恢复 (Recover after 5S delay after disconnecting the load)			

短路说明: 短路电流小于最小值或高于最大值可能会造成短路保护失效, 短路电流超过2600A, 不保证有短路保护, 也不建议做短路保护测试。
 (Short-circuit description: The short-circuit current is less than the minimum value or higher than the maximum value, which may cause the short-circuit protection to fail, and the short-circuit current exceeds 2600A, short-circuit protection is not guaranteed, and short-circuit protection testing is not recommended.)

充电高温保护 Overtemperature Charge	温度保护值 (Temperature protection value)	72	75	78	°C
	温度保护释放值 (Temperature protection release value)	62	65	68	°C
充电低温保护 (无加热功能) Undertemperature Charge (no heating function)	温度保护值(Temperature protection value)	-15	-10	-5	°C
	温度保护释放值 (Temperature protection release value)	-8	-5	3	°C
充电低温保护 (带加热功能) Undertemperature Charge (with heating function)	温度保护值 (Temperature protection value)	-3	0	3	°C
	温度保护释放值(Temperature protection release value)	2	5	8	°C
放电高温保护 Overtemperature Discharge	温度保护值 (Temperature protection value)	82	85	88	°C
	温度保护释放 (Temperature protection release value)	72	75	78	°C
放电低温保护 Undertemperature Discharge	温度保护值 (Temperature protection value)	-23	-20	-17	°C
	温度保护释放 (Temperature protection release value)	-13	-10	-7	°C
FET 高温保护(内置) high temperature protection of FET(Built-in)	温度保护值 (Temperature protection value)	85	90	95	°C
	温度保护释放值 (Temperature protection release value)	65	70	75	°C
均衡功能 (Balance Function)	均衡开启电压 (Equalization turn-on voltage)	3.27	3.30	3.33	V
	开启压差 (Difference opening voltage value)		15		mV
	均衡电流 (Balance current)			200	mA
	均衡模式 (Balance model)	静态/充电/放电均衡 (Idle/Charge/Discharge equalization)			
	均衡类型 (Balance type)	脉冲模式 (Pulsed model)			

持续电流 (Continuous current)	充电过流保护值 (Charge over current protection value)	一级放电过流保护值 (The first discharge over current protection value)	二级放电过流保护值 (The second discharge over current protection value)	短路保护值 (Short circuit protection value)
100A	110±5A	110±5A	500±100A	1400±280A
110A	120±5A	120±5A	500±100A	1400±280A
120A	140±5A	140±5A	500±100A	1400±280A
130A	150±10A	150±10A	500±100A	1400±280A
140A	160±10A	160±10A	700±140A	1800±360A
150A	170±10A	170±10A	700±140A	1800±360A
160A	180±10A	180±10A	700±140A	1800±360A
170A	190±10A	190±10A	900±180A	2200±440A
180A	200±10A	200±10A	900±180A	2200±440A
190A	210±10A	210±10A	900±180A	2200±440A
200A	220±10A	220±10A	900±180A	2200±440A