Product Solution

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Release date:	2022/04-12
Customer（客户）：	
Battery model name（电池型号）：	U-P48100-2-N
Applicable Products (适用产品):	
Doc.No: (编号):	Spec-Pack-3330

Customer approval(客户承认)
Comment (备注): Customer's signature/ Date(客户签名/日期) : _____

Approved核准	Checked审核	Prepared制定

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REVISION AND UPDATES更改记录

版本 Revision	描述 Description	日期 Date	承认 Approval
A0	新版本 Original Release	2022-04-12	

目录 catalog

目录

1. 适用范围 Scope：

本规格书适用于深圳市飞碟动力科技有限公司设计开发的可充电池组产品。

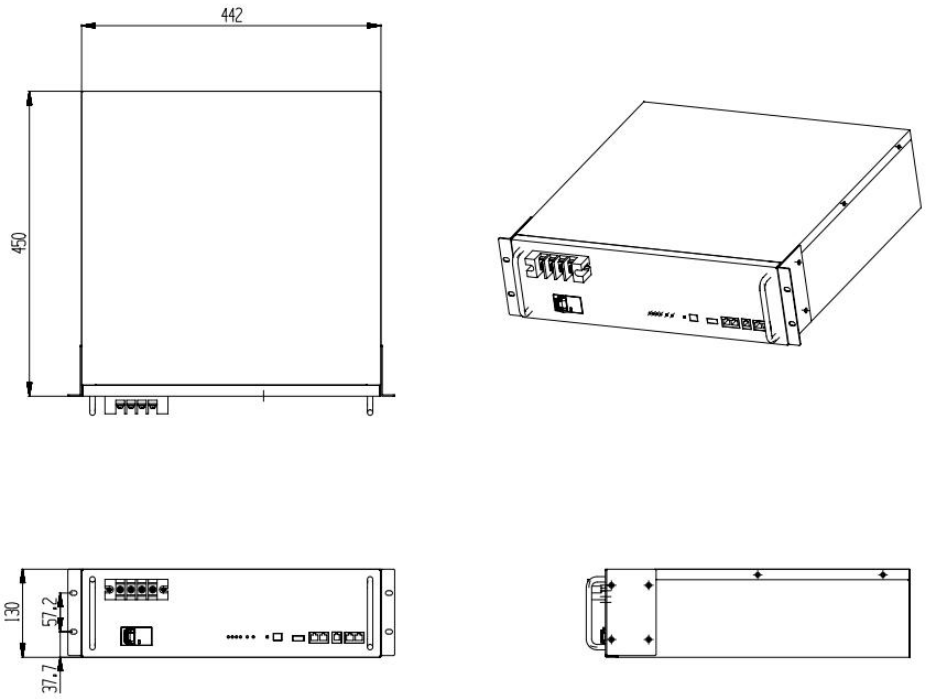
This specification is applicable to rechargeable battery pack products designed and developed by Shenzhen UFO Power Technology Co., Ltd.

2. 基本特性 Normal performance：

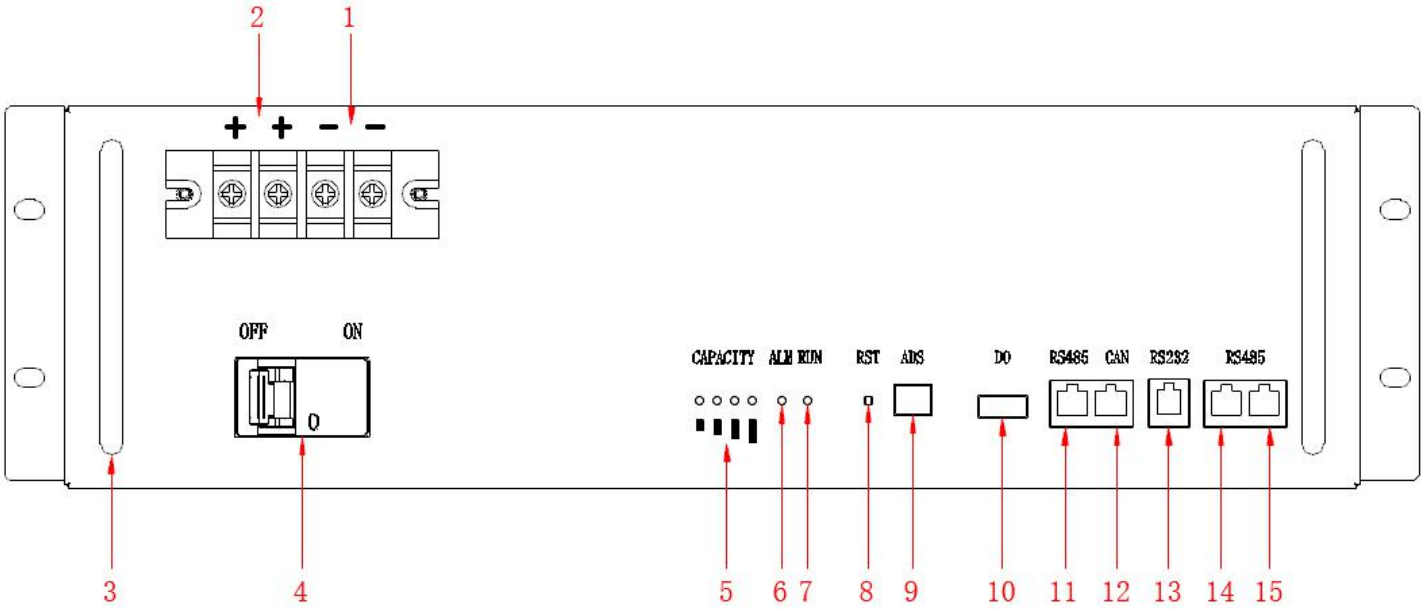
	序号 NO.	项目 Item	常规参数 General Parameter		备注 Remark
Package 电池组	1	组合方式 Combination method	15S1P		LiFePO4
	2	*额定容量 Rated Capacity	标称容量 Typical	100Ah	0.2C,@25℃
			最小容量 Minimum	98Ah	0.2C,@25℃
	3	额定电压 Rated Voltage	48V		
	4	出厂SOC Factory SOC	30~60%		
	5	放电终止电压 Voltage at end of Discharge	42V		放电截止电压 Discharge Cut-off Voltage
	6	充电方式（恒流恒压） Charging mode (CC-CV)	MAX 54.75V		
	7	*内阻 Internal Impedance	≤40mΩ		半电态下用交流法测量内阻 Internal resistance measured at AC 1KHz after 50% charge 使用出货后不到一个星期及循环次数少于5次的新电池测量 The measure must uses the new batteries that within one week after shipment and cycles less than 5 times
	8	标准充电电流 Standard charge current	20A		充电时间：大约6个小时 Charge time : Approx 6h
		限流充电 Limiting current	20A		软件开启（Software opening）
	9	标准放电 Standard discharge	20A		
	10	最大充电电流 Maximum Charge Current	100A		

	11	最大放电电流 Maximum Discharge Current	100A	
	12	工作温度范围 Operation Temperature Range	Charge: 0~55℃ Discharge: -20~60℃	单体电池储存湿度范围 Bare Cell 60±25%R.H.
	13	储存温度范围 Storage Temperature Range	Less than 12 months : -10~35℃ （小于12月：-10~35℃） less than 3 months: -10~45℃ （小于3个月：-10~45℃） Less than 7 day : -20~65℃ （小于7天：-20~65℃）	60±25%R.H. 出货状态时的湿度范围 at the shipment state
	14	*尺寸 Dimensions	W442*D450*H130mm	
	15	*重量 Weight	40kg	
	16	体积能量比 Volumetric specific energy	185.64WH/L	
	17	质量能量比 Gravimetric specific energy	120WH/KG	
	18	通讯方式 Communication mode	RS485/CAN	
	19	电池软件版本 Battery software version	V1.0	
	21	*最大串联数 Maximum series number	禁止 Forbid	
	22	*最大并联数 Maximum number of parallels	15PCS	请参照6.3参数进行串联使用 Please refer to 6.3 parameters for serial use

3. 产品尺寸图/Product dimension drawing：



4. 端子定义 Terminal definition：



NO.	说明 Description	功能说明 Function description
1	电池负极 Battery-	负极端子 Negative terminal
2	电池正极 Battery+	正极端子 Positive terminal
3	把手 Handle	把手 handing
4	空气开关 MCB	输出开关 Output ON/OFF
5	电量显示 Electricity volume indicator	Display the battery's capacity(Four lights)
6	ALM	报警跟保护 Alarm and protection
7	RUN	工作 work
8	复位键 Reset key	开关按钮 On/OFF button
9	拨码器 ADS Dialer	显示连接地址 Display connection address
10	干接点 Dry contact	1/2常开、故障保护期间关闭3/4常开、蓄电池电量过低报警信号关闭 1/2 Normally open, closed during fault protection 3/4 Normally open, closed when a low battery alarm signal has occurred
11	RS485	RS485通讯接口 RS485 communication interface
12	CAN	CAN通讯接口 CAN communication interface
13	RS232	RS232通信接口（用于电池状态监测） RS232 communication interface (for battery condition monitoring)
14	RS485	RS 485通信接口（用于通信并联，电池状态监控或制造商调试或服务） RS485 communication interface (Used in communication parallel,and for battery condition monitoring or manufacturer to debug or service)
15	RS485	RS 485通信接口（用于通信并联，电池状态监控或制造商调试或服务） RS485 communication interface (Used in communication parallel,and for battery condition monitoring or manufacturer to debug or service)

5. BMS/PCM参数 BMS/PCM Parameters：

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	4S	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	3380mV	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	2900mV	可设 Optional	过放保护30秒后，仍无法恢复时，将进入低功耗模式 Over discharge protection for 30 seconds After that, it is still unable to recover When it comes back, it will enter Low power mode
		单体过放保护电压 Cell over discharge protection voltage	2800mV	可设 Optional	
		单体过放保护延时 Over discharge protection delayarge protection delay	1S	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	3000mV	可设 Optional	
		充电解除 Discharge of charge	接入充电器可激活 The access charger may be activated.		
3	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	
		总体过充保护延时 Overall over-charge protection delay	4S	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	50.6V	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		
	总体过放保护 Overall over discharge protection	总体过放告警电压 Overall over amplifier alarm voltage	43.5V	可设 Optional	
		总体过放保护电压 Overall over discharge protection voltage	42V	可设 Optional	

4	Protection	总体过放保护延时 Overall overplay protection delay	1S	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	45V	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	充电限流功能 Charging current limiting function	充电限流电流 Charging current limiting current	20A		限流开启可设置，最大开启电流值100A Current limit opening can be set and maximum opening Current value 100A
6	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	连续出现10次将锁定该状态，不再自动解除 If it appears 10 times in a row, the state will be locked and will not be released automatically
		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	1S	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		
7	放电过流1级保护 Discharge over current level 1 protection	放电过流1级告警电流 Discharge overcurrent level 1 alarm current	105A	可设 Optional	连续出现10次将锁定该状态，不再自动解除 If it appears 10 times in a row, the state will be locked and will not be released automatically
		放电过流1级保护电流 Discharge over current level 1 protection current	110A	可设 Optional	
		放电过流1保护延时 Discharge over current level 1 protection delay	1S	可设 Optional	
	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 level 2 protection	放电过流2级保护电流 Discharge over current level 2 protection current	≥150A	可设 Optional	连续出现10次将锁定该状态，不再自动解除 If it appears 10 times in a row, the state will be locked and will not be released automatically
		放电过流2保护延时 Discharge over current level 2 protection delay	100mS	可设 Optional	
	放电过流2级保护解除 Discharge over current level 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		

9	短路保护 Short-circuit protection	短路保护电流 Short circuit protection current	≥350A		
		短路保护延时 Short circuit protection delay	≤300μS		
		短路保护解除 Short circuit protection released	有充电时，保护短路解除 When there is charging, the short circuit protection is removed		
			负载移除后将自动解除 When the load is removed, it is automatically unloaded		
10	MOS 高温保护 MOS high temperature protection	MOS 过温告警温度 MOS over-temperature alarm temperature	90℃	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	
11	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	50℃	可设 Optional	
		充电高温保护温度 Charging high temperature protection temperature	55℃	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	-15℃	可设 Optional	
		放电高温告警温度 Discharge high temperature alarm temperature	55℃	可设 Optional	
		放电高温保护温度 Discharge high temperature protection temperature	60℃	可设 Optional	

		放电高温保护解除温度 Discharge high temperature protection release temperature	50℃	可设 Optional	
12	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	55℃	可设 Optional	
		环境高温保护温度 Environmental high temperature protection temperature	75℃	可设 Optional	
		环境高温保护解除温度 Environmental high temperature protection release temperature	55℃	可设 Optional	
13	消耗电流 Consumed current	工作自耗电电流 Working self-consumption current	≤45mA(带屏) ≤45mA (with LCD)		
			≤40mA（不带屏） ≤40mA (without LCD)		
		低功耗模式电流 Low power mode current	≤100μA		
14	均衡功能 Equilibrium function	均衡开启电压 Balanced opening voltage	3450mV	可设 Optional	
		开启压差 Open pressure difference	30mV	可设 Optional	
15	电量低警告 Low power alarm	电量低告警门槛 Low power alarm threshold	SOC < 5%	可设 Optional	充电时不告警 No alarm during charging
16	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	
17	电芯失效保护 Cell failure protection	单体压差 Unit pressure difference	压差 > 1V Low power alarm threshold	NO	不允许充放电 Charging and discharging are not allowed
18	满充判断 Full charge judgment	满充电压 Full charge voltage	> 52.5V	可设 Optional	同时满足后停止充电，并更新 SOC 为 100% At the same time, stop charging and update SOC to 100%
		截止电流 Cut off current	< 2A	可设 Optional	

6. 使用说明 Instructions

6.1. 使用前请仔细阅读产品说明书及电池表面标识。
Please read the product manual and battery surface label carefully before use.

6.2. 电池禁止串联。
Batteries are not allowed to be connected in series。

6.3. 电池最多允许15台并联，并联时请开启限流模块。
Up to 15 batteries are allowed to be connected in parallel. Please turn on the current limiting module when connecting in parallel.

6.4. 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.

6.5. 电池组应在室温存放，应充电至40%~60%的电量，为防止过放，建议每3个月进行一次充电。
The battery pack shall be stored at room temperature and charged to 40% - 60% of the electricity. In order to prevent over discharge, it is recommended to charge every 3 months.

6.6. 电池组应在规定条件下使用，对超过存储一年的电池性能不做保证。
The battery pack shall be used under the specified conditions, and the performance of the battery stored for more than one year is not guaranteed.

6.7. 在使用过程中，应远离热源、高压，避免儿童玩弄电池，切勿摔打电池。
During use, keep away from heat source and high voltage, avoid children playing with the battery, and do not beat the battery.

7. 免责说明 Disclaimers：

产品使用前请用户仔细阅读产品规格书，使用说明书及使用注意事项等。了解产品的使用方法及应用范围；若出现产品使用方法错误，电路连接不对或采用输入电源，负载功能参数与产品规格书所标示性能参数不符等现象，均属于使用不当。由此使用不当造成产品、负载及周边连接件的损坏。本公司均不承担任何责任。

Please read the product specification, operation manual and precautions carefully before use. Understand the use method and application scope of the product; if the product use method is wrong, the circuit connection is wrong or the input power supply is used, and the load function parameters are inconsistent with the performance parameters indicated in the product specification, it is improper use.The product, load and peripheral connectors are damaged due to improper use. The company does not assume any responsibility.

本规格书中任何未提及的事项，须经双方协商确定。
Any matters not mentioned in this specification shall be determined by both parties through negotiation.

本规格书最终解释权归飞碟动力有限公司。
UFO Power Co., Ltd. reserves the right of final interpretation of this specification.