



Lithium Battery Charger
锂电池充电器
Specifications
规格书

客户 Client:		
型号 Model:		
规格 Format:	29.4V 10A	
制作日期 Date:	2024/01/12	
批准 Approvalled by	审核 Checked by	制作 Prepared by
客户承认 Customer approval		
批准 Approvalled by	审核 Checked by	确认 Notarize



Catalog

目录

1. Overview/概况	4
2. Product main specifications/产品主要参数	4
3. Environmental conditions/产品使用环境	4
4. Electrical characteristics/电气特性	5
(1)Input/输入	5
(2)Output/输出	5
(3)Protection/保护	6
(4)Charging status and charging curve/充电指示灯状态和充电曲线	6
5. Safety regulations and EMC/安规与 EMC	7
6. Environmental test requirements/环境试验要求	9
7.Mechanical characteristics /机械特性	10
8. Precautions/注意事项	11
9. Packaging, transportation, storage/包装、运输、贮存	12
10. Reliability/可靠性	13

1. Overview 概况

The charger a fan cooling charger. The input voltage range is 100-240Vac, the single-channel voltage is up to 29.4V, and the maximum current is 10A. The power supply has reverse polarity protection. The entire power supply is designed in strict accordance with safety regulations.

充电器为风扇冷却充电器。输入电压范围为100-240Vac，单通道电压最高为29.4V，最大电流为10A。电源具有反极性保护。整个电源的设计均严格按照安全法规进行。

2. Product main specifications 产品主要参数

Rated input voltage 额定输入电压	Output voltage 输出电压	Output current 输出电流	Stable voltage accuracy 稳压精度
100-240Vac	29.4Vdc	10A	±0.2V

3. Environmental conditions 产品使用环境

NO. 序号	Project 项目	Technical index 技术参数	Unit 单位	Remark 备注
1	Operating temperature 运行温度	-10~+45, Typical value 25 -10~+45, 典型值 25	°C	Full load 满载
2	Storage temperature 贮存温度	-40~70, Typical value 25 -40~70, 典型值 25	°C	
3	Relative humidity 湿度	5%—95%		Non-condensing 无凝结
4	Altitude 海拔	≤2000	m	Normal operation 正常工作
5	Cooling method 冷却方式	Fan cooling 风扇冷却		



4. Electrical characteristics 电气性能

(1) Input 输入				
NO. 序号	Project 项目	Technical index 技术参数	Unit 单位	Remark 备注
1.1	Rated input voltage 额定输入电压	100-240	Vac	
1.2	Input voltage range 输入电压范围	90-264	Vac	
1.2	Input current Max 输入最大电流	5	A	Vin= 100Vac @Full load Vin= 100Vac 满载
1.3	AC input voltage frequency 输入交流电频率	47-63	Hz	
1.4	PF value PF 值	≥0.92		Input 100V-240Vac@ Full load 输入 100V-240Vac 满载
(2) Output 输出				
NO. 序号	Project 项目	Technical index 技术参数	Unit 单位	Remark 备注
2.1	Output voltage 输出电压	29.4±0.2	Vdc	
2.2	Output constant current 输出恒流	10±5%	A	
2.3	Charge transfer current 充饱转灯电流	500-1000	mA	
2.4	Efficiency 效率	≥88%		Input 230V Maximum load 输入 230V 最高负载



2.5	Ripple & Noise 纹波与噪声	≤ 500	mVp-p	Tested by a oscilloscope using 20MHz bandwidth and the output is paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor 量测时示波器选用 20MHz 带宽限制,输出端要并联一颗 0.1uF 的陶瓷电容和一颗 10uF 的电解电容
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(3) Protection 保护

NO. 序号	Project 项目	Technical index 技术参数	Remark 负载
3.1	Reverse polarity protection 反极性保护	When the battery's positive and negative terminals are reversely connected to the charger output, the charger will automatically shut down 当电池的正负极反向连接到充电器输出时，充电器将自动关闭	Close 关闭
3.2	Output short circuit protection 输出短路保护	The charger will automatically shut down when a short circuit occurs on the charger output. 当充电器输出发生短路时，充电器将自动关闭。	Close 关闭
3.3	Output over voltage protection 输出过压保护	When the DC output voltage $\geq 1.05 V_{out}$, the charger turns off the output 当 DC 输出电压 $\geq 1.05 V_{out}$ ，充电器关闭输出	Close 关闭
3.4	Output over current protection 输出过流保护	When the charger output current $\geq 1.1 I_{out}$, the charger turns off the output 当电充电器输出电流 $\geq 1.1 I_{out}$ ，充电器关闭输出	Close 关闭

(4) Charging indication status and charging curve 充电指示状态和充电曲线

NO. 序号	Project 项目	Technical index 技术参数
4.1	Power on state 开机状态	LED is green light LED 显示绿灯
4.2	Charging state 充电状态	LED is Red light LED 显示红灯
4.3	Battery charging full state 电池充满状态	LED is green light LED 显示绿灯

4.4	Abnormal state 异常状态	LED is red light (twinkling) LED 显示红灯闪烁
4.5	Charge curve 充电曲线	

5. Safety regulations and EMC 安规与 EMC

NO. 序号	Project 项目		Standard (or test conditions) 标准 (或测试条件)	Remark 备注
1	Anti- Electricity Strong Degree 抗电强度	input - output 输入—输出	1500Vac/10mA/1 min	No flash arc, no breakdown 无飞弧、无击穿
		input - ground 输入—大地	1500Vac/10mA/1 min	
		output - ground 输出—大地	500Vdc/10mA/1 min	
2	Absolutely edge Electricity Hinder 绝缘电阻	input - output 输入—输出	$\geq 10M\Omega @ 500Vdc$	Under normal atmospheric pressure, relative humidity is 90%, when the test DC voltage is 500V 在正常大气压力下，相对 湿度为 90%，试验直流电 压 500V 时
		input - ground 输入—大地	$\geq 10M\Omega @ 500Vdc$	
		output - ground 输出—大地	$\geq 10M\Omega @ 500Vdc$	
3	Safety certification 安规认证		CE certification	
4	Leakage current 漏电电流		<3.5mA	
4	EMC requirements	Conducted interference	CLASS A	EN55032



EMC 要求	Radiation interference 辐射干扰	CLASS A	EN55032 FCC CLASS A
	Air discharge 空气放电	±8KV	IEC61000-4-2 (B) (判据 B)
	Contact discharge 接触放电	±6KV	
	Radiation immunity 辐射抗扰	30—1000MHz 10V/m 80%AM (1KHz)	EN61000-4-3 (A) (判据 A) ETSI EN300 386 V1.3.1(2001)
	Conducted immunity 传导抗扰	0.15—30MHz 3V 80% AM (1KHz) Source impedance 150 Ohm 源阻抗 150 Ohm	IEC61000-4-6 (A) (判据 A)
	Fast transient burst 快速瞬变脉冲群	1KV 5/50 Tr/Th ns 5kHz Repetition rate 5kHz 重复率	IEC61000-4-4 (B) (判据 B)
	Surge 浪涌	LEVEL 4	EN61000-4-5 Differential mode 1KV , Common mode 2KV (B) 差模 1KV, 共模 2KV (判据 B)

Note: (A)-normal performance within the range of technical requirements; (B)-allows the performance to be temporarily reduced, not allowed to reset and interrupt; (R)-after the test, the device should not show physical damage or failure (including software Damage) phenomenon, damage to the protective device (fuse) caused by external interference signals is allowed. After replacing the protective device and resetting the operating parameters, the device can operate normally.

注：判据 A——技术要求范围内性能正常；判据 B——允许性能暂时降低，不允许复位和中断；判据 R——在试验后，设备不应出现物理损坏或故障（包括软件损坏）的现象，外部干扰信号引起保护装置（保险丝）的损坏是允许的，在替换保护装置，重新设置运行参数后，设备能正常运行。



6. Environmental test requirements 环境试验要求

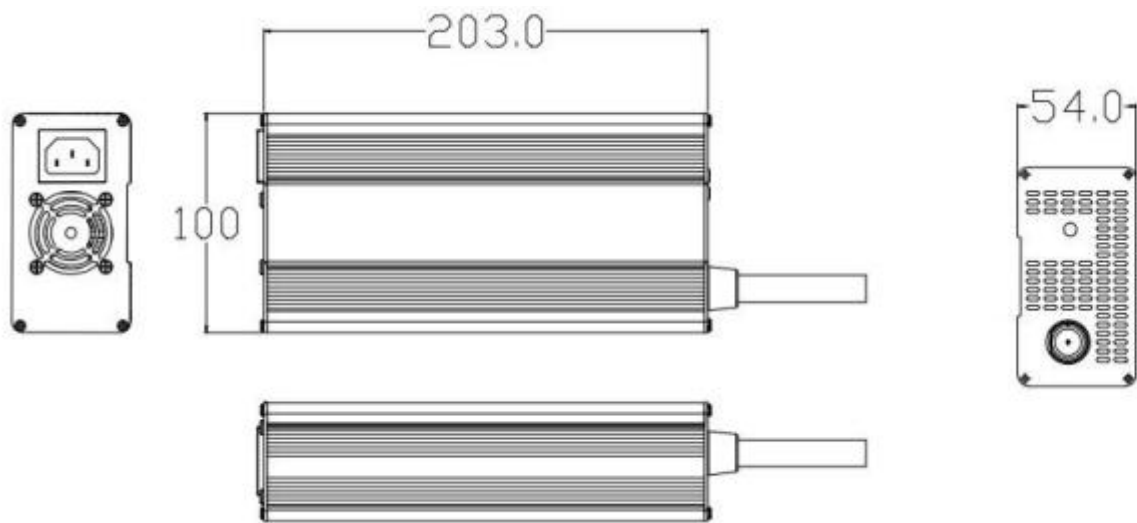
NO. 序号	Project 项目	Technical index 技术要求	Criteria or criteria 判据或标准
1	High temperature operation 高温工作	45°C	Minimum input voltage, full load, working for 24 hours, normal performance 最小输入电压, 满载, 工作24小时, 性能正常
2	Low temperature operation 低温工作	-10 °C	Minimum input voltage, full load, working for 24 hours, normal performance 最小输入电压, 满载, 工作24小时, 性能正常
3	High temperature storage 高温贮存	70 °C	48 hours, two hours at room temperature, normal work 48小时, 常温恢复两小时, 正常工作
4	Low temperature storage 低温贮存	-40 °C	48 hours, two hours at room temperature, normal work 48小时, 常温恢复两小时, 正常工作
5	Vibration 震动	5-9Hz, amplitude 3.5 mm; 9-200Hz, acceleration 10 m / s ² ; 3 axis directions, sweep vibration 5 times in each direction (about 3 × 50 minutes); 5-9Hz, 振幅 3.5 mm ; 9-200Hz , 加速度 10 m/s ² ; 3 轴 向, 每个方向扫频振动 5 次 (约3×50 分钟) ;	(1) Components (2) appearance (3) Various indicators (1) 元器件 (2) 外观 (3) 各项指标
6	Shock 冲击	Pulse contact time 6mS; Acceleration 250 m / s ² ; Six faces with 500 collisions in each direction; 脉冲接触时间6mS ; 加速度 250 m/s ² ; 六个面, 每个方向碰撞 500 次;	(1) Components (2) appearance (3) Various indicators (1) 元器件 (2) 外观 (3) 各项指标

7.Mechanical characteristics (unit: mm)

机械特性 (单位: mm)

Outline dimension (Unit: mm) length × width × height=203×100×54mm

外形尺寸 (单位: mm) 长×宽×高= 203×100×54mm



Tolerance of outline dimension is ± 0.5 mm , others are ± 0.2 mm in the diagram;

外形尺寸公差为 ± 0.5 mm，图中公差为 ± 0.2 mm；

8. Precautions 使用注意事项

- (1) Read the instructions carefully before using the power supply.
(1) 电源使用前必需仔细阅读说明书。
- (2) Check if your input socket can withstand the maximum current.
(2) 检查您的输入插座可通过的电流是否能承受最大电流。

9. Packaging, transportation, storage 包装、运输、贮存

(1) Packaging 包装

The packing box contains the product name, model, manufacturer's logo, inspection certificate from the manufacturer's quality department, and the date of manufacture.

包装箱上有产品名称、型号、厂家标识、厂家质量部门的检验合格证、制造日期等
包装箱内有附件清单。

(2) Transportation 运输

It is suitable for the transportation of cars, boats, and airplanes. It should be covered, protected from sun, and handled carefully during transportation.

适应于车、船、飞机运输，运输中应遮蓬、防晒、文明装卸。

(3) Storage 贮存

When the product is not in use, it should be stored in a packing box. The ambient temperature of the warehouse is -40°C to $+70^{\circ}\text{C}$ and the relative humidity is 5% to 95%. No hazardous gas, flammable, explosive products and corrosion are allowed in the warehouse. Chemical products without strong mechanical vibration, shock and strong magnetic field. The packaging box should be at least 20cm high from the ground and at least 50cm away from the wall, heat source, window or air inlet. The storage period under these conditions is generally 1 year, the inspection should be repeated after 1 year.

产品未使用时应存放在包装箱内，仓库环境温度为 -40°C — $+70^{\circ}\text{C}$ ，相对湿度为5%—95%，仓库内不允许有有害气体，易燃，易爆的产品及有腐蚀性的化学物品，

并且无强烈的机械振动，冲击和强磁场作用，包装箱应垫离地至少 20cm 高，距离墙壁、热源、窗口或空气入口至少 50cm，在本规定条件下的贮存期一般为 1 年，超过 1 年后应重新进行检验。

10. Reliability 可靠性

1、MTBF ≥ 50 Khour (25°C, full load)

MTBF ≥ 5 万小时 (25°C, 满载)

2、Life time ≥ 3 years

寿命 ≥ 3 年