RYDBATT® RYDELEC® 深圳市瑞鼎电子有限公司 SHENZHEN RYDER ELECTRONICS CO.,LTD

SPECIFICATION FOR APPROVAL
承 认 书

客戶 / CUSTOMER	:	
客戶型号 / CUSTOMER P/N	:	
产品名称 / ITEM	:	AC/DC2槽18650锂电池充电器/ AC/DC 2slots 18650 Li-ion battery charger
产品种类 / DESCRIPTION	:	槽 充/slot type charger
本公司产品型号 / OUR MODEL NO.	:	CH-RLi223-01
标准 / STANDARD	:	
額定 / RATING	:	I/P:100V-240V~ 50HZ/60HZ
		I/P:DC12V-24V 1A Max
		O/P:DC4.2V 500mA×2 CH
备注 / REMARKS	:	

注意:在贵司出单前,请确认签回以下项目/ Attention: Before placing orders, please confirm to sign back the followings:

☐ 产品规格(首页) /Production Spec(Front Page)

☐ 铭牌规格(如有) /Nameplate Spec(if any)

☐ 包装规格(如有)/Packing Spec(if any)

版本 REV	描述/DESCRIPTION	日期 DATE
A0	首次发行/FIRST RELEASE	2011-03-19
A1	更改参数，版本升级/CHANGE PARAMETERS, UPDATE	2011-06-23
A2	修改格式/CHANGE FORMAT	2019-01-16

瑞鼎电子/ Ryder Electronics	
	批准/ Approved by
签名 Signature	衣绍鹏
日期/DATE	2019-01-16

客户/ CUSTOMER

确认

Approved by

（签字或公司盖章）

日期/DATE

目　　录 Content

1 产品特点 Product characteristics

- 本机是一款 2 槽锂离子电池充电器；2 槽独立恒流恒压充电方式，确保充电的质量及安全。It is a 2 slots Li-ion battery charger with MCU. 2 slots charging separately with constant current and voltage charge method to ensure charging quality and safety.
- 适合 500mAh-3000mAh 的电池充电。It is suitable for 500mAh-3000mAh battery.
- 具有电池反接保护功能，确保充电器及电池在误操作（接反）的情况下不会损坏充电器及电池；注意请不要长时间将电池反接充电。Battery reversely connected protection, to make sure that battery or charger will not be damaged under the condition of reverse connection. (Please don't charge battery in the reverse polarities for a long time.)
- 充电时将电池放入充电槽内，接上 AC 电源/即可充；使用非常方便。Convenience with AC connection and correct battery placing.
- 双色发光 LED 指示充电状态，显示直观。Bicolor LED.
- 100V-240V~ 50HZ/60HZ 宽电压输入，全球适应。Input voltage: 100V-240V～ 50Hz/60Hz
- DC12V-24V DC 输入，适用所有车载。（24V 输入时输出电流会降低会延长充电时间）
  DC12V-24V DC input, it is suitable for all types of car charger. (Charging time will be prolonged and output current will decrease when input voltage is equal to 24V)

注意：请不要拿本充电器充适应范围以外的其它电池，本规格书所提及的所有电池均指 **18650，14500,18500,RCR123A**（不含降压板和磷酸铁锂电池） 锂离子电池。

Caution: this spec and charger are only suitable for 18650 14500 18500 RCR123A(without step-down board) Li-ion battery.

2 电气性能 Electrical Characteristics

2.1.1额定输入电压 Input rated voltage

额定输入电压 input rated voltage：100V-240V~ 50HZ/60HZ 0.15A Max

额定输入电压 input rated voltage：DC 12V-24V 1A Max

2.1.2输出空载电压 Output voltage in no-load state

输出空载电压 output voltage in no-load state：4.20V 士 0.05V

2.1.3输出充电电流 Output current

输出充电电流 output current: 400-600mA X2CH （CV=3.7V）

2.1.4充电电压范围 Chargeable voltage range

充电电压范围 chargeable voltage range 2.50V-4.25V ×2 CH

2.1.5充饱转灯电流 Turn light current in fully charged state

当电池到充饱状态时由红灯转为绿灯的电流，称为转灯电流

The current that battery is fully charged and LED turns to green from red is called turn light current.

转灯电流 turn light current：≤100mA ×2 CH

2.1.6充电方式 Charge method

采用恒流恒压充电方式 constant current and voltage charge method.

2.1.7短路电流 Short circuit current

当充电器输出端短路，充电器进入短路保护状态，指示灯绿灯常亮，短路电流 < 100mA X2CH

When charger's output short circuit occurs, the charger will apply short circuit protection and LED will turn to green. Short circuit current < 100mA X2CH

2.1.8反接保护电流 Battery reverse connection protection current

充电器反接保护电流：≤10mA x2CH 指示灯绿灯常亮

Reverse connection protection current ≤10mA x2CH, LED will keep in green.

（当电池接反时，充电器会自动保护，不会损坏充电器。注意：不要将充电器、长时间反接。）

(When battery was reversely connected to charger, the charger will apply auto-protection so as not to damage the charger itself. Caution; please don't place the battery reversely in charger for a long time.)

2.1.9充电器反向漏电流 Reverse leakage current

充电器反向漏电流：≤5mA x2CH，（当无市电输入时）

Reverse leakage current ≤5mA x2CH (no AC input).

（当电池在正常充电过程中，AC 断电时电池通过充电器放电的电流称反向漏电流，小的漏电流有利于保持已充入电池的电量。）

(In normal charging state, current discharged through charger from battery pack is called reverse leakage current. Small reverse leakage current is benefit to maintain battery's power volume)

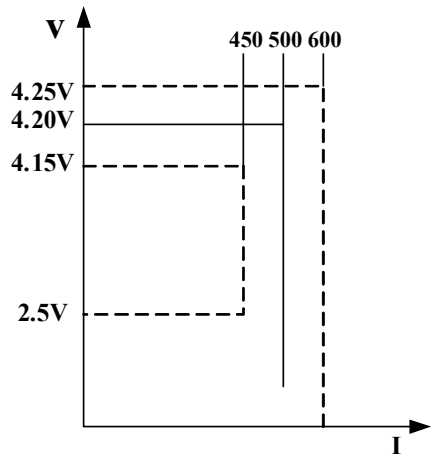
2.1.10 适用电池 Suitable battery

本充电器适合 18650，14500,18500 RCR123A（不含降压板和磷酸铁锂电池）锂离子电池。

This charger is suitable for 18650 14500 18500 RCR123A(without voltage descend board) Li-ion battery.

3 充电方式及 LED 指示状态 Charge method and LED indication

3.1充电器输出特性曲线 Charger's output characteristics curve



3.2 LED 指示 LED indication

不接电池	充电指示灯——绿灯常亮
充电状态	充电指示灯——红灯常亮
充饱状态	充电指示灯——绿灯常亮
输出短路或反接	充电指示灯——绿灯常亮

NO battery	LED --- green
Charging	LED --- red
Full-charged	LED --- green
Short circuit or battery is reversely connected	LED --- green

4 适用环境 Applicable environments

4.1 工作温度 Working temperature

0~+40℃

4.2 工作湿度 Working humidity

工作湿度 working humidity：≤90% （不结露 no condensation）

4.3 贮存温度 Storage temperature

贮存温度 storage temperature：-20~+80℃

4.4 存储湿度 Storage humidity

相对湿度 relative humidity: ≤85%

4.5 大气压力 Atmospheric pressure

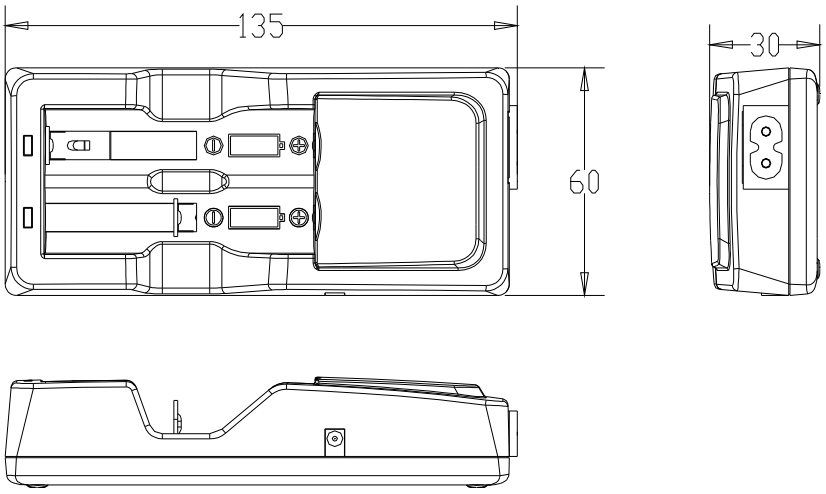
大气压力 atmospheric pressure：70~106KPa

5 机械 Mechanics

5.1 本充电器外观图 Charger's appearance

具体外观颜色及印字按客户要求定制

Appearance can be customized



5.2 本充电器铭牌标贴 Label

按客户要求订制

Label can be customized.

6 可靠性能 Reliable characteristics

- 高温试验：实验温度为 65℃ ±2℃，产品不包装，持续时间为 5 小时。在常温下放置待恢复后对其外观、绝缘强度、指示功 能及电气性能进行重新测试。外观应平整无划痕、毛刺以及其它机械损伤，外露金属部分不应有锈蚀；绝缘测试无击穿、飞弧现象；成品电性能正常；LED 指示功能正常。

  High temperature test: under 65℃ ±2℃，the charger without packing, last for 5 hours. Then take it into the room temperature, test its appearance, LED and electrical specification. The appearance should have no scratches, burrs and other mechanical damage, metal parts rust should have no corrosion. LED indicator and electrical specification work normally.

- 低温试验：实验温度为 －20℃ ±3℃，产品不包装，持续时间为 8 小时。在常温下放置待恢复后对其外观、绝缘强度、指示功能及电性能进行重新测试。外观应平整无划痕、毛刺以及其它机械损伤，外露金属部分不应有锈蚀；绝缘测试无击穿、飞弧现象；成品电性能正常；LED 指示功能正常。

Low temperature test: under－20℃ ±3℃，the charger without packing, last for 8 hours. Then take it into the room temperature, test its appearance, LED and electrical specification. The appearance should have no scratches, burrs and other mechanical damage, metal parts rust should have no corrosion. LED indicator and electrical specification work normally.

- 恒定湿热试验：实验温度为 40℃ ±2℃，湿度为 90%- 95%，产品不包装，持续时间为 48 小时。测试后对其外观、绝缘强度、指示功能及电性能进行重新测试。外观应平整无划痕、毛刺以及其它机械损伤，外露金属部分不应有锈蚀；绝缘测试无击穿、飞弧现象；成品电性能正常；LED 指示功能正常。

  The constant humidity and heat test: under 40℃ ±2℃，humidity 90%～95%，the charger without packing, last for 48 hour. Then test its appearance, LED and electrical specification. The appearance should have no scratches, burrs and other mechanical damage, metal parts rust should have no corrosion. LED indicator and electrical specification work normally.
- 振动试验：频率为 10- 55Hz，振幅为 0.35mm，每个方向上扫频循环次数为 10 次。实验后对其外观、绝缘强度、指示功能及电性能进行重新测试。外观应平整无划痕、毛刺以及其它机械损伤，外露金属部分不应有锈蚀；绝缘测试无击穿、飞弧现象；成品电性能正常；LED 指示功能正常。

  Vibration test: 10～55HZ，amplitude 0.35mm，Sweep cycles in each direction 10 times. Then test its appearance, LED and electrical specification. The appearance should have no scratches, burrs and other mechanical damage, metal parts rust should have no corrosion. LED indicator and electrical specification work normally.
- 跌落试验：高度为 1 米，实验台厚度为 20mm 的硬木板，6 个表面，每个方向 1 次。实验后对其外观、绝缘强度、指示功能及电性能进行重新测试，外观应无机械破损，外露金属部分不应有锈蚀；绝缘测试无击穿、飞弧现象；成品电性能正常；LED 指示功能正常；成品内部应无异响。

  Drop test: from 1M, the test platform is the hardboard with 20mm thickness. 6 surface, once in each direction. Then test its appearance, Dielectric strength, LED and electrical specification. Electrical specification should meet the requirements. The appearance has no damage, no abnormal noise inside.

7 外观要求 Appearance requirements

充电器外壳表面平整无划痕，毛刺及其它机械损伤，丝印完整清晰，外露金属部份无锈蚀。

Charger case should be smooth and no scratches, burrs and other mechanical damage, complete and clear screen, the exposed metal parts no rust.

8 体积与重量 Volume and Weight

8.1 体积 Volume

L135 * W60 * H30 mm^3

8.2 重量 Weight

net：

9 抽样标准 Sampling standard

产品抽样检验参照 MIL-STD-105E 标准制定满足本公司产品品质检验之抽样计划，并严格督导实施。当客户或合同有特殊要求时。可按客户和合同要求执行。

Product sampling reference MIL-STD-105E standards to meet the company's products quality inspection of the sampling plan, and implement strict supervision. It also can be based on the customer's requirement.

10 包装 Packing

产品可外置吸塑包装，具体包装方式可按客户要求订制。

Product can be wrapped with blister. Packing can be customized.

11 使用注意事项 Caution

1. 不可以拿本充电器充适应范围以外的电池。

   This charger is only suitable for 18650 14500 18500 RCR123A(without voltage descend board) Li-ion battery.

2. 不可在超过 40℃环境使用本充电器对电池充电。

   Do not use the charger to charge when temperature is over 40℃.

3. 充电时请远离热源和火源。

   Far away from heat and fire.

4. 请勿在酸、碱、和有腐蚀的环境中使用本充电器及电池。

   Do not use the charger under the environment of acids, alkalis, and corrosion.

5. 请勿将充电器进水或淋雨，以免引起安全问题。

   Do not place the charger into rain or water, or may cause problems.

6. 请勿自行拆开充电器和电池，以免发生危险。

   Do not disassemble charger and battery , to avoid danger.

7. 不得让小孩单独使用本充电器。

   Do not let children use the charger alone. Please place the charger out of reach of children.