USER MANUAL使用说明书

HIGH PERFORMANCE

DC to DC LITHIUM CHARGER

双电池充电器

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■ IMPORTANT SAFETY INSTRUCTIONS 重要安全须知

Save these Instructions – Danger: Please read the user manual and safety instructions carefully before using the appliance. 请妥善留存本说明书备查 – 危险警示：使用本设备前，请务必仔细阅读用户手册及各项安全说明

◆ Ensure good VENTILATION around the unit. 请务必保证充电器四周通风顺畅

◆ Chargers in this series are designed for charging 12V, 24V, 36V and 48V lithium batteries. Do not use the charger with batteries whose voltage fails to match its rated voltage. 本系列充电器专为 12V、24V、36V、48V 锂电池充电研发，切勿给电压参数与充电器额定电压不匹配的电池充电

◆ Disconnect the BATTERY supply and take care when installing power cables. 布设电源线前需断开电池供电，接线过程中谨慎操作

◆ Do not probe the charger with conductive materials. 禁止用各类导电材质戳入、探查充电器内部

◆ Do not use this product in an enclosure containing lead-acid batteries. These batteries vent explosive hydrogen gas, which can be ignited by sparks from electrical connections. 不可在安放铅酸蓄电池的密闭空间内使用本产品：铅酸蓄电池会释放可引发爆炸的氢气，电路接通产生的电火花会引燃氢气

◆ Do not use this product where there are flammable fumes or gases. 严禁在充斥易燃烟气、可燃气体的场所使用该充电器

◆ Do not try to use the charger for any other purpose than what is presented in this manual. 本充电器仅可用于本手册载明的充电用途，不得用作其他任何场景

◆ Unplug the charger before cleaning and when there is no battery pack in the charger. 清洁充电器时、充电器未安放电池组时，均需提前拔下电源插头

◆ Do not try to connect two chargers together. 禁止将两台充电器对接串联使用

◆ Do not use the charger in the circumstances that the input/output Polarity does not match the load polarity. 若输入、输出极性和负载极性不一致，禁止开启充电器工作

◆ The cover may under no circumstances be opened. If the cover is damaged, then the charger may no longer be used. 严禁私自拆开充电器外壳；外壳出现破损后，充电器不得继续使用

◆ Do not recharge non-rechargeable batteries. 不可对一次性不可充电电池进行充电

◆ Do not connect output DC clamps to the carburetor, fuel lines, or sheet metal body parts. 请勿将直流输出电瓶夹接驳在化油器、燃油管路、车身金属钣金部位

◆ Never attempt to charge a frozen battery. 绝对不要给冻结/结冰的蓄电池充电

⚠ WARNING 警示

To avoid the risk of fire, electrical shock, or electrocution. 谨防引发火灾、触电及电击事故

◆ Always remove the battery pack before cleaning, inspecting, or performing any maintenance on the tool. 清洁、检查工具或对工具开展任何维护作业前，务必先取下电池组

◆ Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. 未经合规责任方书面明确许可，擅自对本设备进行改动、改装，将导致用户丧失设备使用权限

⚠ NOTE 注意

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception, The reception can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 本设备会产生、使用并向外辐射射频能量。若未按照说明书要求安装和使用，可能会对收音机、电视机的信号接收造成有害干扰。用户可通过开启、关闭本设备，判断干扰是否由本机引发；可选用以下一种或多种方法排除干扰

◆ Reorient or relocate the receiving antenna. 调整接收天线的方向，或挪动天线摆放位置

◆ Increase the separation between the equipment and the receiver. 拉大本机与信号接收设备之间的间距

◆ Consult the dealer or an experienced radio/TV technician for help. 联系经销商，或向专业无线电、电视维修技师咨询求助

■ CHARGING A BATTERY 电池充电操作步骤

Follow these steps to charge a battery 请按照以下流程为电池充电:

1. Connect the DC output cable ② to the AUXILIARY battery terminal receptacle. 将② 号直流输出线缆插接至辅助蓄电池端子插座

2. Connect the DC input cable ① to the STARTING battery terminal receptacle. 将①号直流输入线缆插接至启动蓄电池端子插座

ACC/EN: connect to the Vehicle ACC wire (Power on at ACC gear, power off upon vehicle shutdown)
黄线：连接车辆 ACC 控制线（钥匙拧至 ACC 档位通电，车辆熄火后断电）

3. The POWER LED light should be ON. 电源指示灯亮起，代表设备已通电

4. When batteries are fully charged, the LED indicator will be GREEN. 电池全部充满后，指示灯变为绿色

COLOR LED FOR STATUS INDICATION 指示灯状态说明

The Charger LED Light ③ illuminates in a specified order to show the current battery status. 充电器指示灯③会依照固定灯光颜色显示电池当前工作状态

Red: battery is charging **红色**：电池正在充电中

Green: fully charged **绿色**：电池已充满电量

FUNCTION & SAFETY 功能 & 安全标准

EMC 电磁兼容	EN 55014-1:2017+A11:2020
	EN 55014-2:2015
	EN IEC 61000-3-2:2019
	EN 61000-3-3:2013+A1:2019
MTBF 平均无故障工作时间	MTBF≥100,000H
Waterproof level 防水等级	IP65

1. Short-circuit protection – protects the charger from short-circuit damage. 短路保护：可防止充电器因短路发生损坏

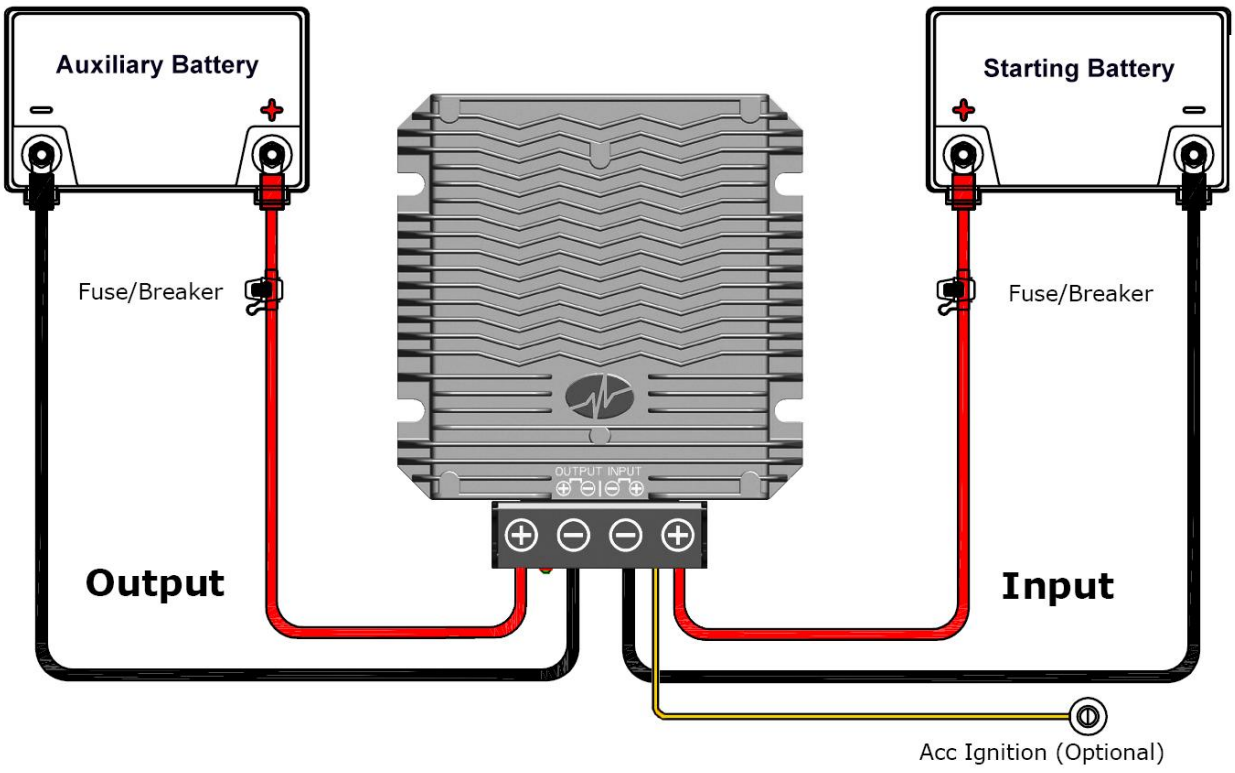
2. Overcurrent protection – protects the charger from over-current demand. 过流保护：避免充电器承受过大电流负荷而受损

3. Overvoltage protection – protects the batteries from damage. 过压保护：防止电池遭受过压损坏

4. Overtemperature protection – protects the charger and batteries from damage. 过温保护：守护充电器与电池，避免高温损毁

5. Waterproof protection - protects the charger from damage. 防水防护：避免充电器遇水损坏

WIRE CONNECTION 接线

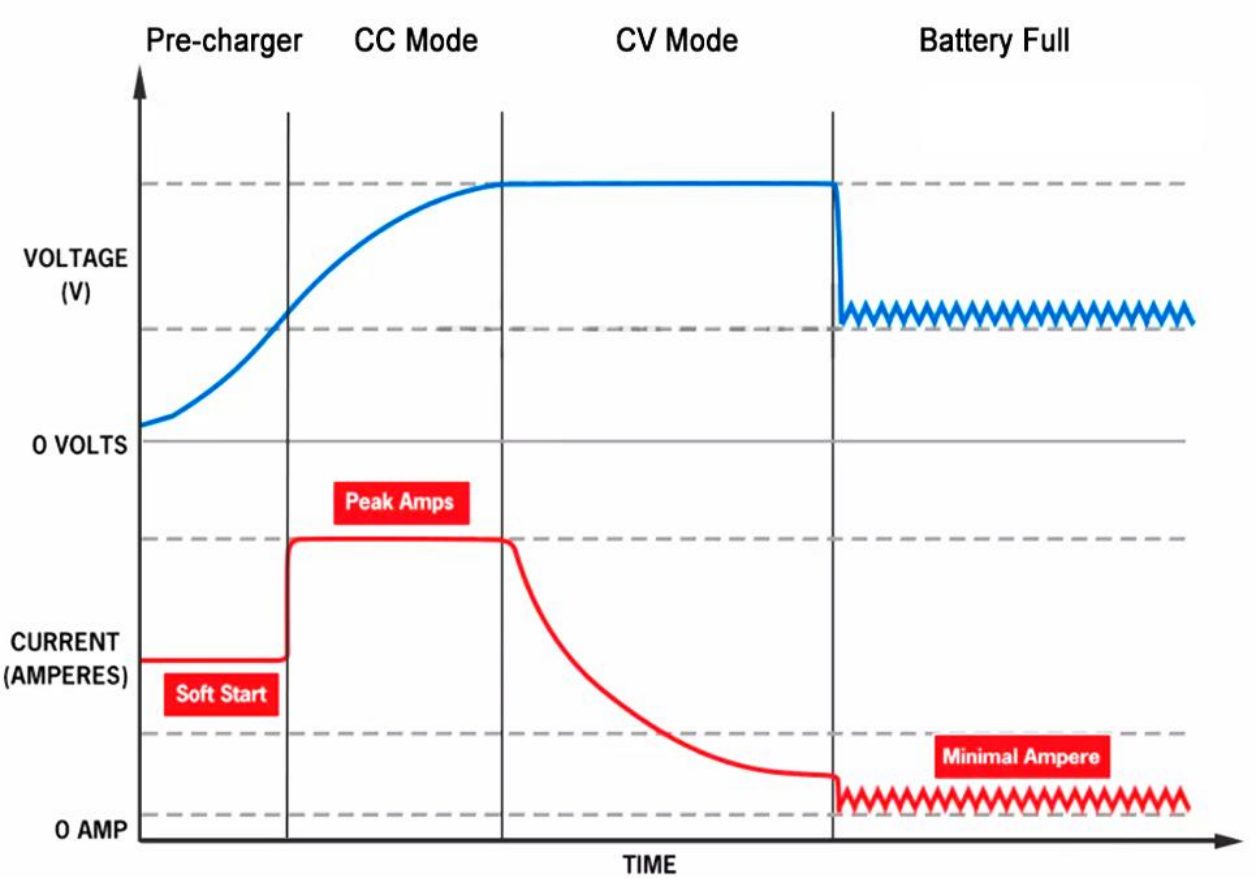


2-STAGE AUTOMATIC CHARGING 两段式全自动充电

This is a fully automatic battery charger with 2 charge stages. 本款为双段全自动电池充电器

Automatic charging protects your battery from being overcharged so you can leave the charger connected to the battery indefinitely. 自动充电功能可有效防止电池过充，因此充电器可长期持续连接在电池上无需拔除

2-stage charging is a sophisticated charging technique that gives your battery longer life and better performance compared to using traditional chargers. 相较于传统充电器，双阶段充电属于成熟先进的充电技术，能够延长电池使用寿命，同时优化电池整体使用性能



BULK (CC MODE) 恒流快充阶段（大电流充电 / CC 恒流模式）

The Bulk stage reduces charging time by charging the battery at the maximum rate (constant current) to a set voltage, at which point the battery is approximately 80% charged. 此阶段以最大恒定电流对电池充电，直至达到设定电压，可大幅缩短充电时长；该阶段结束时，电池电量约充至 80%

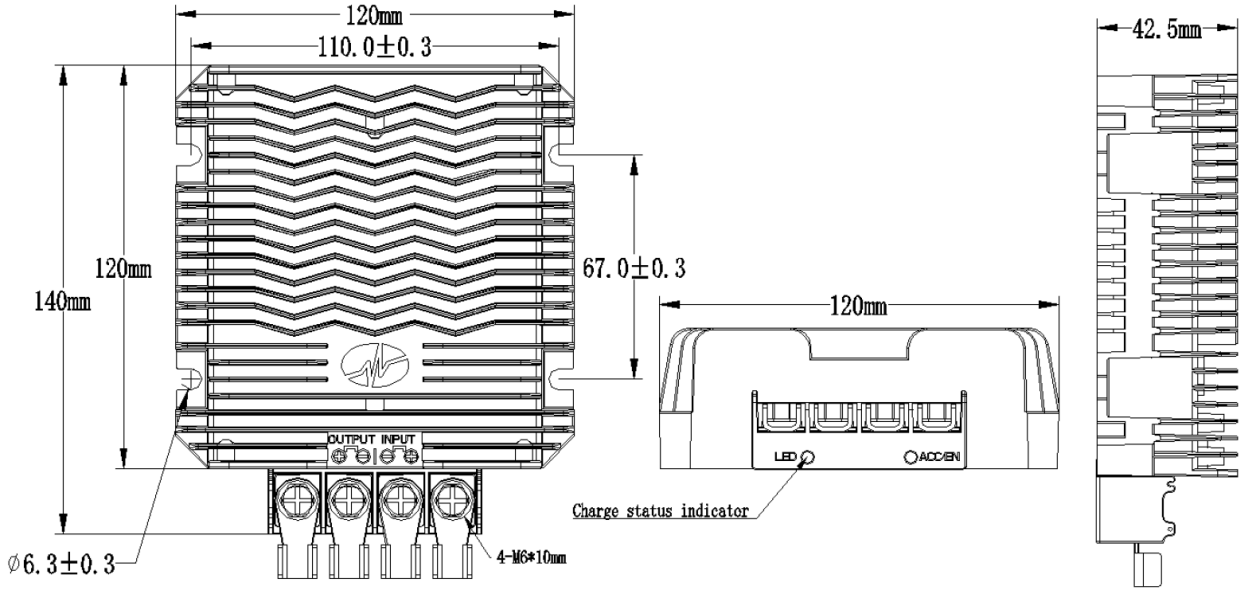
ABSORPTION (CV MODE) 恒压吸收阶段（CV 恒压模式）

The absorption stage charges the battery to 100% by adjusting the charge rate allowing the battery to absorb more power. 进入该阶段后，系统自动调节充电电流大小，让电池逐步吸纳电量，最终将电池完全充满至 100%

SPECIFICATIONS 规格参数

P/NO. 型号	WG-48C1240M	WG-12C2420M	WG-12C3613M	WG-12C4810M
Input rated voltage	24V/36V/48V DC	12V DC	12V DC	12V/24V DC
Input voltage range	18-60V DC	10-16V DC	10-22V DC	10-30V DC
Efficiency	96.2% @ 48Vin	95.5% @ 12Vin	94.4% @ 12Vin	94.5% @ 12Vin
Output voltage	14.6V DC	29.2V DC	43.8V DC	58.4V DC
Charging current	40A	20A	13A	10A
Output power	584W			
Ripple & Noise	100-350mVp-p	100-500mVp-p		
Enable pin function	Optional			
Working temperature	-40 ~ +55°c			
Waterproof level	IP65			
Working humidity	10% ~ 90% RH			
Dimension	140*120*42.5mm (5.51*4.72*1.67 inch)			
Weight	≤1.3kg			
Input cables type	6AWG	If the wire length is greater than 1m, it is recommended to use a thicker wire diameter.		
Output cables type	8AWG			
Cooling	Cooling by free air convection			
Packing	Box			

DIMENSIONS 尺寸



NOTE The dimensions have a ± 0.3mm tolerance 尺寸公差：±0.3 毫米

LIMITED WARRANTY 保修条款

◆ We take great pride in our quality, value and performance and believe that this product should offer you trouble free operation throughout its lifetime providing you take care to follow the simple instructions in the product documentation. If you experience any problems with your product, please feel free contact with us. 我方一贯注重产品品质、性价比与使用性能；只要您严格遵守产品配套说明书中的操作规范，本产品可长期顺畅使用、不易出现故障。倘若产品使用期间出现任何问题，均可随时与我们取得联系

◆ **szwengao** provides a one year warranty from the date of purchase, to the original purchaser. This warranty covers manufacturing defects in material and workmanship only. **szwengao** does not cover damage or failure caused by abuse, misuse, faulty installation, improper maintenance, or any attempted repairs not carried out by **szwengao**. **szwengao** 为本产品首位购买人提供自购买当日起为期 1 年的保修服务。本保修仅承保产品原材料以及生产工艺带来的出厂瑕疵。因人为滥用、错误操作、安装失误、保养不当，或是未经本公司许可擅自拆机维修所造成的产品损毁、故障，均不在保修范围内

◆ There will be no obligations or liability on the part of **szwengao** for consequential damages arising from the use of the product or any indirect damages with respect to loss of property, revenue, or costs for removal, installation, or reinstallation. 因使用本产品产生的衍生损失，以及财产损毁、收入损失、拆装及重装产生的各项费用等一切间接损失，**szwengao** 无需承担任何责任与赔偿义务

◆ For warranty service, all shipping charges for returns should be prepaid. If the requested repairs or service are within the terms of this warranty then the item will be returned to you on completion without any charge. The unit must be in its original packaging with any original accessories. **szwengao** will not be responsible or accept any liabilities for any loss or damage to additional items which are sent with returned product. 申请保修售后时，退回货品的全部运费需由寄件方先行垫付。若维修项目符合本保修条款规定，维修完毕后我方将免费把产品寄还给您。返修设备必须保留原外包装盒以及全部原装配件。随返修产品一同寄送的额外物品若发生丢失、损坏，本公司概不承担任何责任。

◆ If the product is not covered under the terms of this warranty. **szwengao** will advise you of the costs to carry out any repairs necessary and the unit will be shipped to you on receipt of payment for the work including the return freight charges. Please allow 2 to 4 weeks for return of your product. Under normal circumstance we try to ensure we carry out warranty repairs within 5 working days. We cannot be held responsible for delays in shipping. 若产品故障不在本保修条款保障范围内，我司会提前告知您所需维修费用；待我方收取全部维修费（含寄回运费）后，才会将维修后的设备寄还给您。整机返修寄回耗时预计 2~4 周。常规情况下，保修范围内的故障维修，我们会尽量在 5 个工作日内完成。物流派送延误所带来的时间损耗，本公司不承担相关责任.

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