

# USER MANUAL

HIGH PERFORMANCE

# DC to DC LITHIUM CHARGER



C400L SERIES

Copyright © Shenzhen Wengao Electronic Co., Ltd.

## **IMPORTANT SAFETY INSTRUCTIONS**

**Save these Instructions – Danger: Please read the user manual and safety instructions carefully before using the appliance.**

- ◆ Ensure good VENTILATION around the unit
- ◆ The C400L series is designed to charge 12V, 24V and 36V lithium batteries. Do not attempt to use with batteries with voltages not matching the chargers specified voltage.
- ◆ Disconnect the BATTERY supply and take care when installing power cables
- ◆ Do not probe the charger with conductive materials.
- ◆ 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.
- ◆ Do not use this product where there are flammable fumes or gases.
- ◆ Do not try to use the charger for any other purpose than what is presented in this manual.
- ◆ Unplug the charger before cleaning and when there is no battery pack in the charger.
- ◆ Do not try to connect two chargers together.
- ◆ Do not use the charger in the circumstances that the input/output Polarity does not match the load polarity.
- ◆ The cover may under no circumstances be opened. If the cover is damaged, then the charger may no longer be used.
- ◆ Do not recharge non-rechargeable batteries.
- ◆ Do not connect output DC clamps to the carburetor, fuel lines, or sheet metal body parts.
- ◆ Never attempt to charge a frozen battery.

### **WARNING**

**To avoid the risk of fire, electrical shock, or electrocution.**

- ◆ Always remove the battery pack before cleaning, inspecting, or performing any maintenance on the tool.
- ◆ Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## NOTE

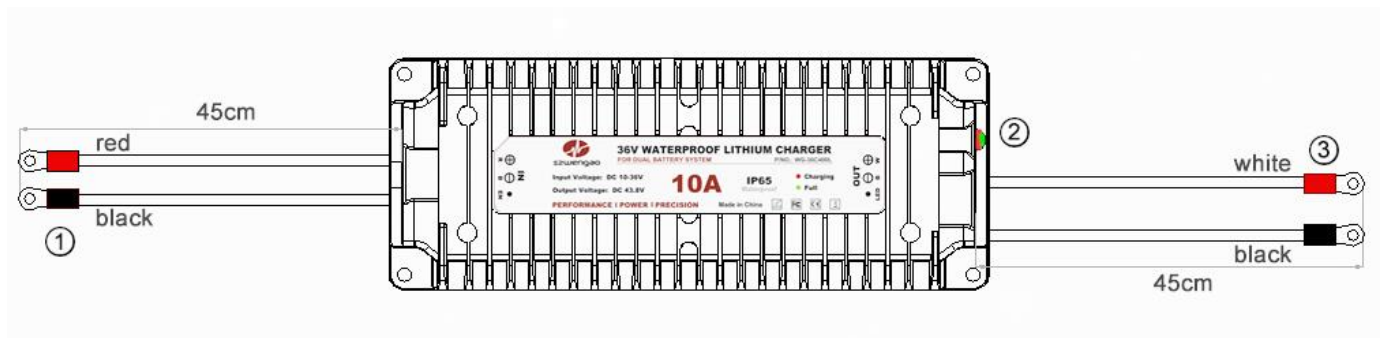
This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. The reception can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Reorient or relocate the receiving antenna.
- ◆ Increase the separation between the equipment and the receiver.
- ◆ Consult the dealer or an experienced radio/TV technician for help.

## CHARGING A BATTERY

Follow these steps to charge a battery:

1. Connect the DC output cable **③** to the AUXILIARY battery terminal receptacle.
2. Connect the DC input cable **①** to the STARTING battery terminal receptacle.
3. The POWER LED light should be ON.
4. When batteries are fully charged, the LED indicator will be GREEN.



## COLOR LED FOR STATUS INDICATION

The Charger LED Light **②** illuminates in a specified order to show the current battery status.

**Red:** battery is charging

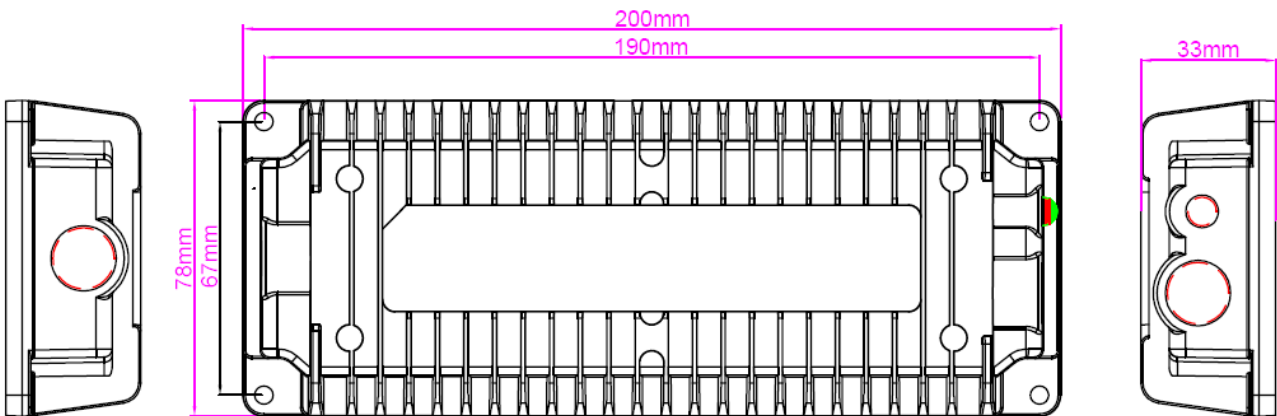
**Green:** fully charged

## FUNCTION & SAFETY

EMC Moisture-proof	EN 55014-1:2017+A11:2020
	EN 55014-2:2015
	EN IEC 61000-3-2:2019
	EN 61000-3-3:2013+A1:2019
MTBF	MTBF $\geq$ 100,000H
Waterproof level	IP65

1. Short-circuit protection – protects the charger from short-circuit damage.
2. Overcurrent protection – protects the charger from over-current demand.
3. Overvoltage protection – protects the batteries from damage.
4. Overtemperature protection – protects the charger and batteries from damage.
5. Waterproof protection - protects the charger from damage.

## DIMENSIONS



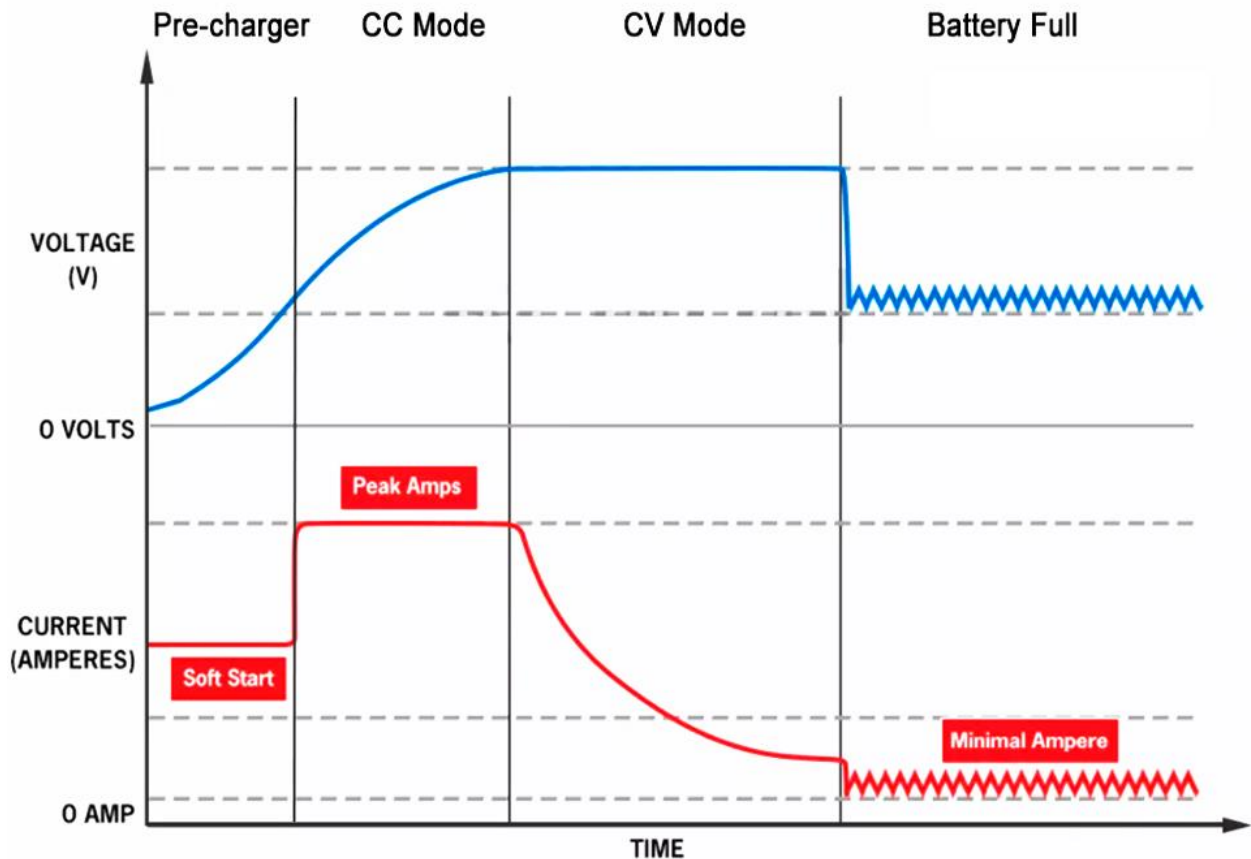
**NOTE** The dimensions have a  $\pm 0.5\text{mm}$  tolerance

## 2-STAGE AUTOMATIC CHARGING

This is a fully automatic battery charger with 2 charge stages.

Automatic charging protects your battery from being overcharged so you can leave the charger connected to the battery indefinitely.

2-stage charging is a sophisticated charging technique that gives your battery longer life and better performance compared to using traditional chargers.



### BULK (CC MODE)

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.

### ABSORPTION (CV MODE)

The absorption stage charges the battery to 100% by adjusting the charge rate allowing the battery to absorb more power.

## ■ SPECIFICATIONS

P/NO.	WG-12C400L	WG-24C400L	WG-36C400L
Input rated voltage	12V/24V DC		
Input voltage range	10-36V DC		
Efficiency	96% @ 24Vin		
Output voltage	14.6V DC	29.2V DC	43.8V DC
Charging current	30A	15A	10A
Output power	400W	400W	300W
Ripple & Noise	300mVp-p	470mVp-p	580mVp-p
Enable pin function	Optional		
Working temperature	-40 ~ +80°C		
Working humidity	10% ~ 90% RH		
Dimension	200*78*33mm (7.87*3.07*1.3 inch)		
Weight	1.1kgs		
Input cables type	10AWG @ 0.45m cables with standard rings M8/M10		
Output cables type	12AWG @ 0.45m cables with standard rings M8/M10		
Cooling	Cooling by free air convection		

## ■ LIMITED WARRANTY

- ◆ 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.
- ◆ **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**.
- ◆ 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.
- ◆ 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.
- ◆ 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.