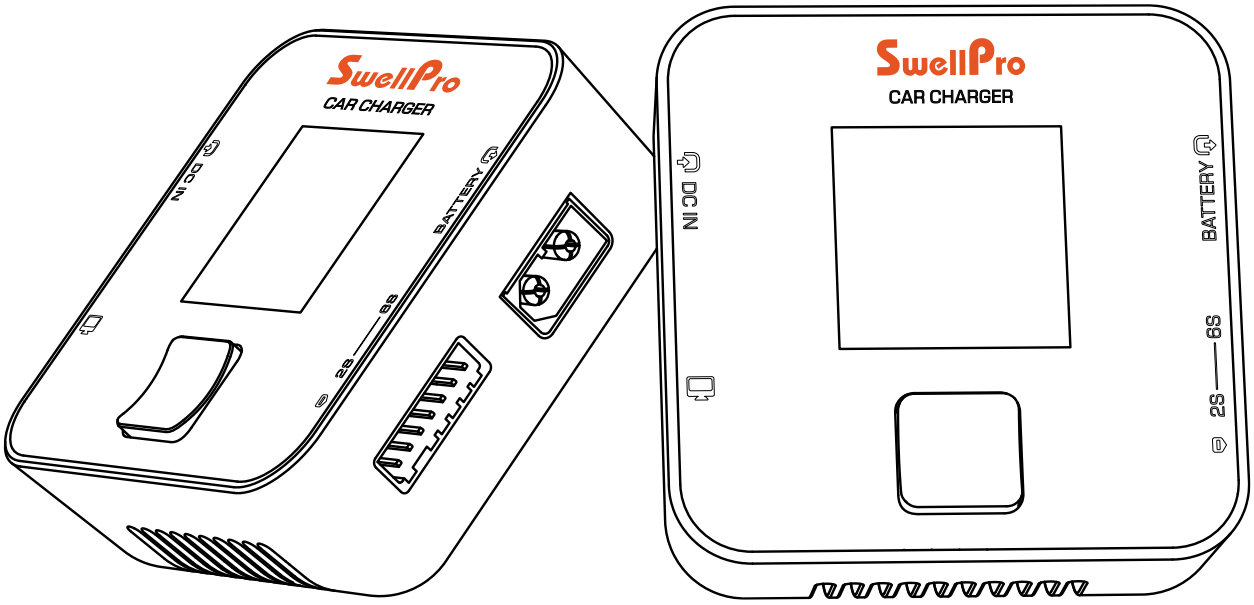
Smart Car Charger

User Guide



SwellPro

Visit www.swellpro.com for the latest version of this manual and firmware updates for your drone and accessories.

V1.0 – Sept 2021

Thank You

Thank you for purchasing the SwellPro Smart Car Charger.

It is essential to familiarize yourself with the features of this equipment by carefully studying this manual.

Visit www.swellpro.com for the latest manuals, software, and tips. Refer to the Version Information section at the end of this manual, which details additions and corrections to this manual.

Social Media

Join our SwellPro Facebook page to meet other people who share their adventures with SwellPro. www.facebook.com/SwellPro/

Register Product Warranty

Please register your product as soon as possible to ensure warranty coverage.
https://www.SwellPro.com/info/register.html

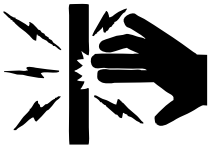
Contents

⚠ Warning

READ AND UNDERSTAND ALL SAFETY INFORMATION BEFORE USING THIS PRODUCT. Failure to follow these safety instructions may result in ELECTRICAL SHOCK, EXPLOSION, FIRE, which may result in a SERIOUS INJURY, DEATH, or PROPERTY DAMAGE.

- Never use the charger without supervision. Please stop using the charger and refer to the manual if there is any abnormity in use.
- Always place the charger away from the car while charging. Do not place it in the car.
- Keep the charger away from dust, humidity, rain, and high temperature and avoid direct exposure to the sunlight and intense vibration.
- Read the instruction manual carefully to be familiar with the features of the charger, and set proper charging parameters before operating. Setting the parameters incorrectly will result in damage to the product and personal property and cause serious injury.
- When charging the battery for an extended period of time (longer than 1 hour), please start the car and keep the engine running to prevent the car battery from over-discharge.

Danger



Electrical Shock. The product is an electrical device that can shock and cause serious injury. Do not cut power cords. Do no t submerge in water or get wet.

Explosion. Unmonitored, incompatible, or damaged batteries can explode if used with the product. Do not leave the product unattended while in use. Use product only with batteries of recommended voltage. Operate the product in well-ventilated areas.

Fire. The product is an electrical device that emits heat and is capable of causing burns. Place the charger on a heat-resisting, non-flammable and insulating surface. Do not use it on the car's seats, carpet, or other similar places. Do not cover the product. Do not smoke or use any source of electrical spark or fire when operating the product. Keep product away from combustible materials.

Eye Injury. Wear eye protection when operating the product. Batteries can explode and cause flying debris. Battery acid can cause eye and skin irritation. In the ca se of contamination of eyes or skin, flush the affected area with running clean water and contact poison control immediately.

Explosive Gases. Working in the vicinity of a lead-acid is dangerous. Batteries generate explosive gases during normal battery operation. To reduce the risk of battery explosion, follow all safety information instructions and those published by the battery manufacturer and manufacturer of any equipment intended to be used in the vicinity of battery. Review cautionary markings on these products and on the engine.

Important Safety Warnings

Getting Started. Before using the charger, carefully read the battery manufacture's specific precautions and recommended rates of charge for the battery. Make sure to determine the voltage and chemistry of the battery by referring to your battery owner's manual prior to charging.

Mounting. It is important to keep in mind the distance to the battery. The DC cable length from the charger, with either the battery clamp or eyelet terminal connectors, is approximately 77.7-inches (1973.6mm). Allow for 12-inches (304mm) of slack between connections.

Proposition 65. Battery posts, terminals, and related accessories contain chemicals, including lead. These materials are known to the State of California to cause cancer and birth defects and other reproductive harm.

Personal Precaution. Only use product as intended. Someone should be within range of your voice or close enough to come to your aid in case of emergency. Have a supply of clean water and soap nearby in the case of battery acid contamination. Wear complete eye protection and protective clothing while working near a battery. Always wash hands after handling batteries and related materials. Do not handle or wear any metal objects when working with batteries including; tools, watches or jewelry. If metal is dropped onto battery, it may spark or create a short circuit resulting in electrical shock, fire, explosion which may result in injury, death or property damage.

Minors. If the product is intended by "Purchaser" to be used by a minor, purchasing adult agrees to provide detailed instructions and warnings to any minor prior to use. Failure to do so is the sole responsibility of the "Purchaser," who agrees to indemnify SwellPro for any unintended use or misuse by a minor.

Choking Hazard. Accessories may present a choking hazard to children. Do not leave children unattended with product or any accessory. The product is not a toy.

Handling. Handle product with care. The product can become damaged if impacted. Do not use a damaged product, including, but not limited to, cracks to the casing or damaged cables. Do not use product with a damaged power cord. Humidity and liquids may damage product. Do not handle product or any electrical components near any liquid. Store and operate product in dry locations. Do not operate product if it becomes wet. If product is already operating and becomes wet, disconnect it from the battery and discontinue use immediately. Do not disconnect the product by pulling on the cables.

Modifications. Do not attempt to alter, modify or repair any part of the product. Disassembling product may cause injury, death or damage to property. If product becomes damaged, malfunctions or comes in contact with any liquid, discontinue use, and contact SwellPro. Any modifications to the product will void your warranty.

Accessories. This product is only approved for use with SwellPro accessories. SwellPro is not responsible for user safety or damage when using accessories not approved by SwellPro.

Location. Prevent battery acid from coming in contact with the product. Do not operate the product in a closed-in area or an area with restricted ventilation. Do not set a battery on top of product. Position cable leads to avoid accidental damage by moving vehicle parts (including hoods and doors), moving engine parts (including fan blades, belts, and pulleys), or what could become a hazard that may cause injury or death.

Operating Temperature. This product is designed to work in ambient temperatures between 32° F and 104° F (0°C and 40° C). Do not operate outside of temperature ranges. Do not charge a frozen battery. Discontinue use of product immediately if the battery becomes excessively warm.

Storage. Do not use or store your product in areas with high concentrations of dust or airborne materials. Store your product on flat; secure surfaces so it’s not prone to falling. Store your product in a dry location. The storage temperature is -20° to 60°C . Never exceed 60ºC under any condition.

Cleaning. Power off the product before attempting any maintenance or cleaning. Clean and dry product immediately if it comes in contact with liquid or any type of contaminant. Use a soft, lint-free (microfiber) cloth. Avoid getting moisture in openings.

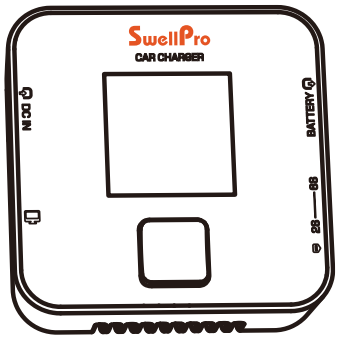
Explosive Atmospheres. Obey all signs and instructions. Do not operate product in any area with a potentially explosive atmosphere, including fueling areas or areas which contain chemicals or particles such as grain, dust or metal powders.

High-Consequence Activities. This product is not intended for use where the failure of the product could lead to injury, death or severe environmental damage.

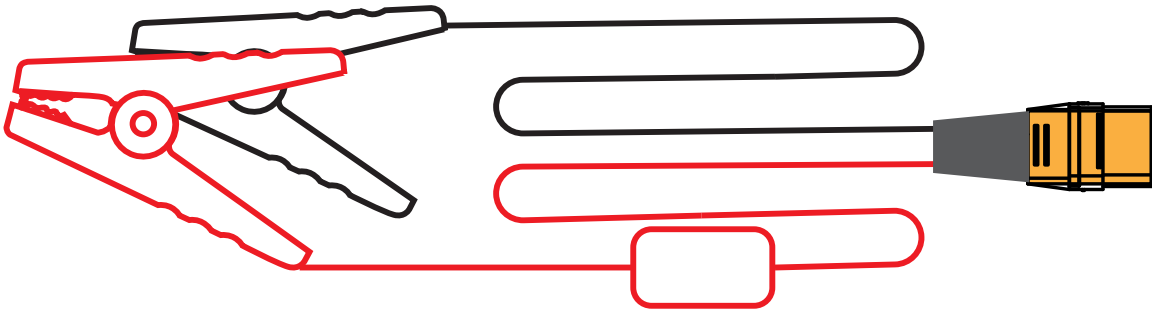
Radio Frequency Interference. Product is designed, tested, and manufactured to comply with regulations governing radio frequency emissions. Such emissions from the product can negatively affect the operation of other electronic equipment, causing them to malfunction.

Product Overview

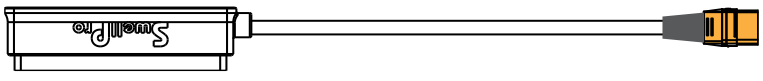
In the Box



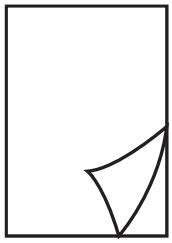
Smart Car Charger x1



Power cable with battery clamp x1

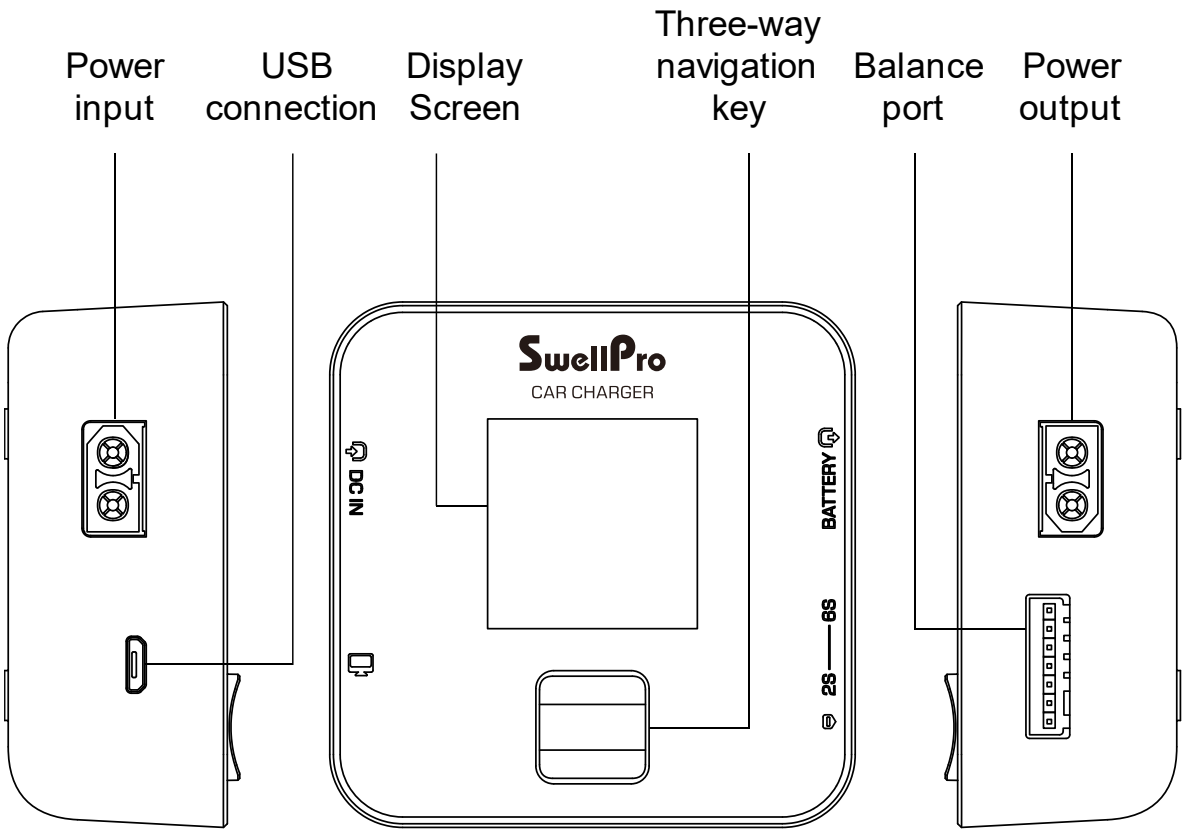


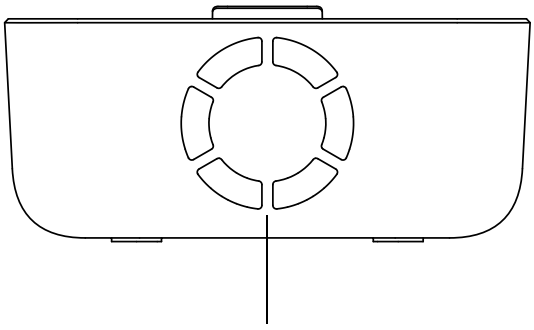
Charging Cable (SplashDrone 4) x1



User Guide x1

Product Diagram



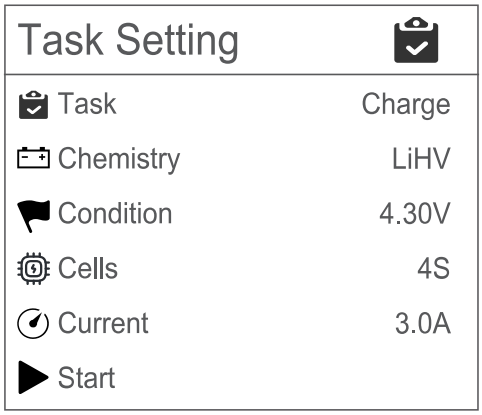


Fan Vent

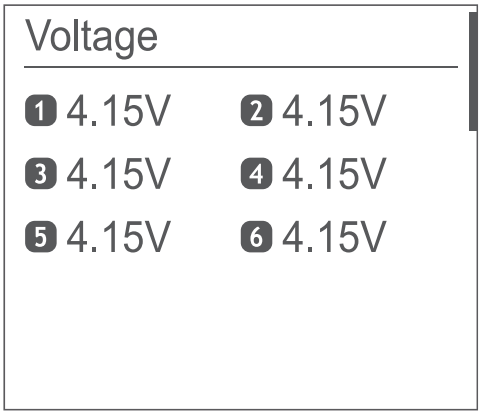
Three-way navigation key:

Press the top half: the screen scroll up
press the botton half: the screen scroll down
Press the middle part:
Press to enter the task settings,
press and hold to enter the system settings.

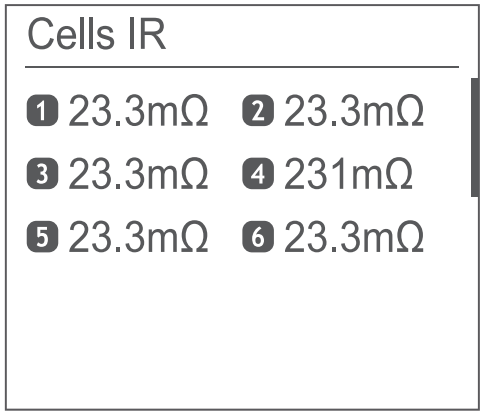
Charger Screen



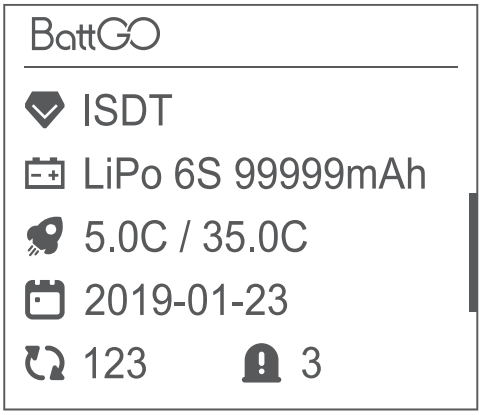
Task Setting



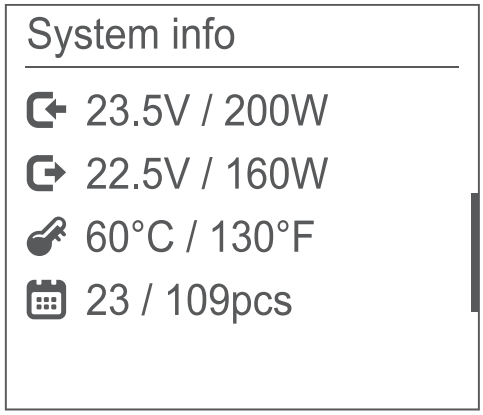
Cell Voltage



Cell Internal Resistance



BattGO Information



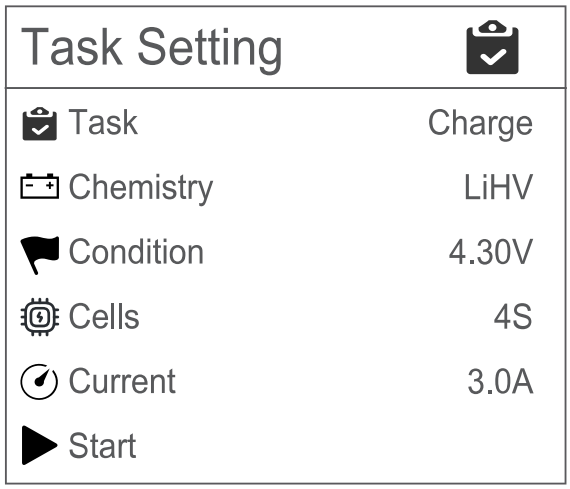
Working Parameter

💡 Shift the parameters on display by three-way navigation keys while working, as cell voltage, cell internal resistance, BattGo information, working parameter. The cell voltage and internal resistance are only on display in balancing charging mode. The BattGo information will display only when connected to the BattGo battery, and the cell voltage is able to display without being connected to the balance port.

Settings

Connect the power source to the SwellPro Smart Car Charger's power input port, short press the navigation key to enter the task setting, as shown.

Task Setting



Task Setting

Task	Charge，Discharge，Destroy，DC power，Storage
Battery	LiHv、LiPo、LiIon、LiFe、Pb、NiMh/Cd
Battery and cell count	LiFe,LiIon,LiPo,LiHv(1~6S)， Pb(1~12S)，NiMH/Cd(1~16S
Current	0.1~8.0A

Task

- **Charge**

Balancing port is strongly recommended when charging lipo battery, which can make sure to monitor voltage on each cell battery and balance it when charging. Warning beeper will yell before start charging lipo if in non-balance mode(no connecting with

balance port). Current setting range: 0.1~8.0A. The battery type, cell count and charging current are auto set accordingly when connecting with BattGo battery.

- **Discharge**

Current setting range: 0.1~1.0A. The battery type, cell count and discharging current are auto set accordingly when connecting with BattGo battery.

- **DC Power**

The charger can be used as a DC power supply when choosing this function, with adjustable voltage 2.0~30.0V, and current 0.2~5.0A. The battery type, parameter and current are not optional in this task.

- **Storage**

Current setting range: 0.1~8.0A. The battery type, cell count and storage current are auto set accordingly when connecting with BattGo battery.

- **Destroy**

Connect the battery to be scrapped, and select the scrap function in task options, which capable to discharge the battery to 0V. Current setting range: 0.1~1.0A. The battery type and cell count are are auto set accordingly when connecting with BattGo battery.

Chemistry(Battery Type)

Selectable battery type: **LiHv、LiPo、LiIon、LiFe、Pb、NiMh/Cd.**

Preset battery types and charging parameter:

	NiCd/MH	Pb	LiFe	LiIon	LiPo	LiHv
Rated voltage	1.20V	2.00V	3.20V	3.60V	3.70V	3.80V
Full charge voltage	1.40V	2.40V	3.65V	4.10V	4.20V	4.35V
Storage voltage	×	×	3.30V	3.70V	3.80V	3.85V
Discharge voltage	1.10V	1.90V	2.90V	3.20V	3.30V	3.40V
Preset voltage	0.90V	1.80V	2.60V	2.90V	3.00V	3.10V

Balance charge	×	×	√	√	√	√
Unbalanced charge	√	√	√	√	√	√
Supported cell count	1~16S	1~12S	1-6S	1~6S	1~6S	1~6S
Max. charging current	8.0A	8.0A	8.0A	8.0A	8.0A	8.0A

System Setting

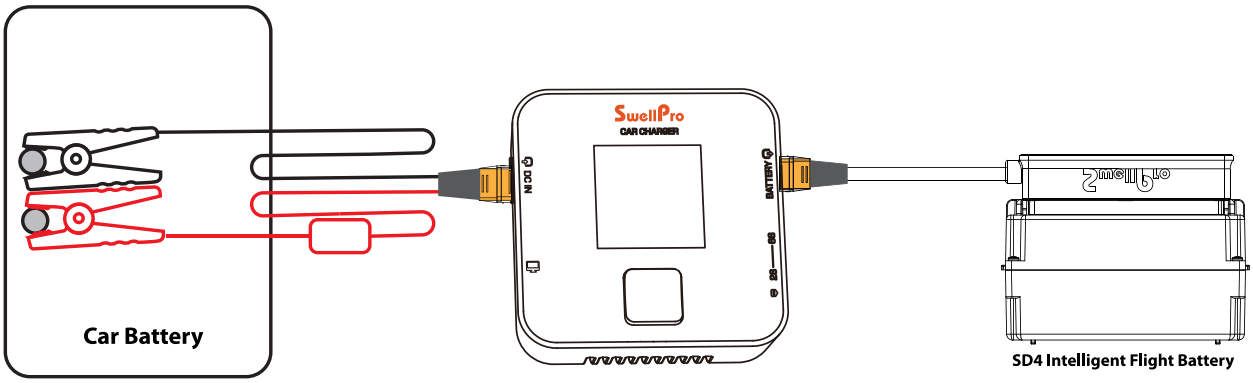
Under the standby interface, Press and hold the middle position of the three-way navigation keys to display the system setting menu:

- **Min. input voltage protection 10~24V:** all tasks in operation will be stopped at once and hint warning of low voltage, when the input voltage is lower than the input voltage as set up. It will protect the battery from being discharged when using battery pack as power supply.
- **Max. input power setting 30~230W:** if the input power is smaller than the max working power (230W), please set up the parameter as the actual output power as max input, to protect the input power and enable the charger to work stable.
- **Buzzer volume:** The operation sound will be shielded when the volume is off, except the warning error beep.
- **Self-test:** Enter system setting. select self-test task.
- **Calibration:** the input voltage, output voltage and balance voltage of the charger can be calibrated with this task.

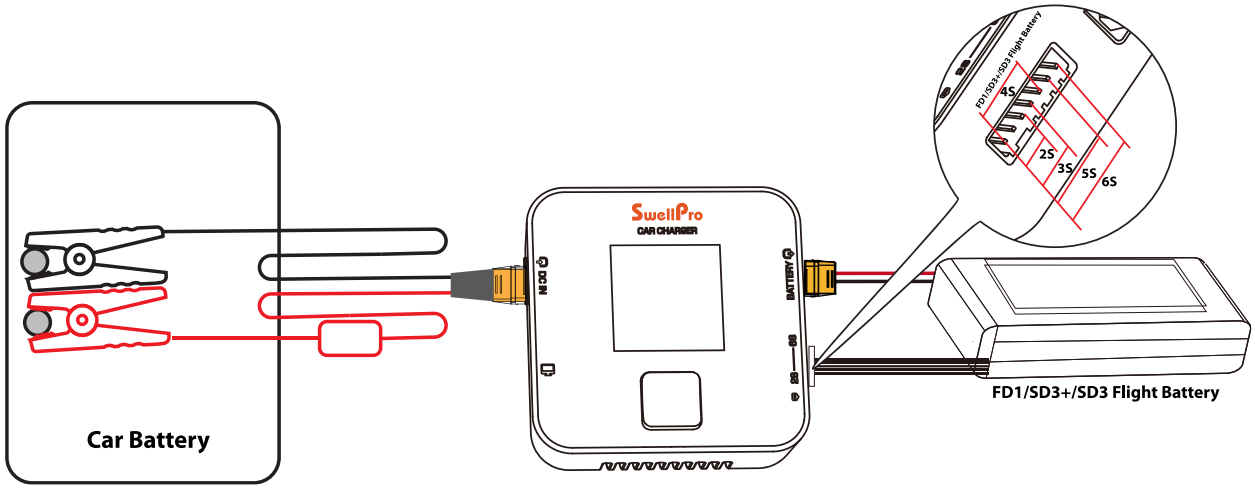
How to Use

1. **Connect to the car battery.**
   - Connect the positive (red) eyelet terminal connector to the positive (POS,P,+) battery terminal. Connect the negative (black) eyelet terminal connector to the negative (NEG,N,-) battery terminal.
   - Connect the other end of the cable to “DC IN” port of the charger. The charger is going to power on.

2. **Connect to the flight battery.**



For SD4 intelligent flight battery: Use the in-the-box SD4 charging cable. Connect the SD4 intelligent flight battery on one end of the charging cable. Plug in the yellow XT60 connector to the “BATTERY” port of the charger.



For FD1/SD3+/SD3 flight battery: Plug in the yellow XT60 connector to the "BATTERY" port of the charger. Plug in the balance cable to the "2S – 6S" port of the charger. Note: the balance cable should align to the bottom pin of the port.

3. Press the middle position of the navigation button to enter "Task Setting".

4. **Set Task Setting Parameter.**

	Task	Chemistry	Condition	Cell	Current
SD4 Intelligent Flight Battery	DC Power		Voltage: 16.8V		4.5A 8A (Max)
FD1 Flight Battery	Charge	LiHV	4.35V	4S	4A 8A (Max)
SD3+ Flight Battery	Charge	LiHV	4.35V	4S	4A 8A (Max)
SD3 Flight Battery	Charge	Lipo	4.20V	4S	3A 5.2 (Max)

5. After configuring the correct charging parameter, press start to start charging. The charging will stop automatically after the battery is fully charged.

💡 Tips: you can also use other batteries as your power source to charge the flight battery. Flight batteries can also be the power source to charge the other batteries.

⚠ When charging the battery for an extended period of time (longer than 1 hour), please start the car and keep the engine running to prevent the car battery from over-discharge.

Appendix

Specification

SwellPro Smart Car Charger	
Input voltage	10-30V DC
Output voltage	1.0-30.0V DC
Max. input current	9A
Balance current	0.5A/Cell Max
Charging current	0.1 - 8.0 A
Discharging current	0.1 - 1.0 A
Max. charging power	200 W
Max. discharging power	10 W
Abnormal voltage alarm	Support
Incorrent cell count setting alarm	Support
Supported battery types and cell	LiFe, LiIon, LiPo, LiHv 1~6S; Pb 1~12S; NiMH/Cd 1~16S
Working temperature	0 – 40 ℃
Storage temperature	-20 – 60 ℃
Dimention	72x72x32 mm
Weight	120 g
Cable length	2 m

Charging Current Guide

Make sure to know the maximum charging current of the battery before charging, never use excessive current to charge to damage your battery, which will result in over heat even explosion during the charging process.

The charging and discharging capacity of battery is usually marked with C value. Multiplying the charging C value and battery capacity equals to the maximum charging current supported by the battery. For example, for a 1000 mAh battery with a charging capacity of 5C, the maximum charging current would be 1000*5=5000mA; therefore, the maximum charging current is 5A.

For a lithium battery, if it is impossible to confirm the supported charging C value, please set the charging current below 1C, for the sake of its (lithium battery) safety. The reference relation between C value and charging time: charging time ⩾60 minutes/ charging C value (e.g. it needs around 60-70 minutes to complete charging with 1C). Due to differences in battery conversion efficiency, the time to complete the charging might be extended.

Version Information

SwellPro products are constantly improving, so as the product user guides. It is recommended to visit www.swellpro.com to check and download the latest user guide.

Version

1.0 SwellPro Smart Car Charger User Guide First Edition

