Constant Voltage and Constant Current DC Power Supply Instruction

Model: RD6006P

Date: 2021. 2. 25

Dear users, thank you for purchasing the constant voltage constant current DC power supply produced by Hangzhou Ruideng Technology Co., Ltd. In order to let you know more about the full function of this product, get a better experience and avoid misuse. Please read this instruction carefully before using it. Keep it for future reference.

Note: This instruction is corresponding to firmware V1.34, the page and operation may be different under different firmware versions, please pay attention when using it. We do recommend you to download the latest firmware for better experience.



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1.1 Technical Parameter

Model	RD6006P	RD6006P-W
Input voltage range	7-70.00V	
Output voltage range	0-60.000V	
Output current range	0-6.0000A	
Output power range	0-360.00W	
Input voltage measurement resolution	0.01V	
Output voltage setting measurement resolution	0.001V	
Output current setting measurement resolution	0.0001A	
Battery voltage measurement resolution	0.01V	
Input voltage measurement accuracy	±(1%+5 digits)	
Output voltage accuracy between setting and measurement	±(0.5‰+4 digits)	
Output current accuracy between setting and measurement	±(1‰+6 digits)	
Battery voltage measurement accuracy	±(0.5%+3 digits)	
Automatic cut off current value when charging	Set by yourself	
Output ripple typical	20mV VPP Note①	
Working temperature range	-10℃~40℃	
External sensor Temperature detection range:	-10℃~100℃/0℉~200℉	
External sensor Temperature detection accuracy:	±3℃/±6℉	
Constant voltage mode response time	2ms（0.1A-5A Load）	
Constant voltage mode load regulation	±(0.1%+2 digits)	
Constant current mode load regulation	±(0.1%+3 digits)	
Capacity measurement range	0-9999.99Ah	
Energy measurement range	0-9999.99Wh	
Capacity and energy statistical error	±2%	
Buck working mode	Voltage drop >10%*VOUT+2V	
Cooling fan start condition	Output current >4A or System temperature>45℃	
Cooling fan shut down condition when working	Output current <3.9A and System temperature <45℃	
Over temperature protection	System temperature >80℃	
Screen brightness setting	0-5(6 levels)	
Screen	2.4 inch color HD display	
Weight(with package)	About 0.62Kg	
Product dimension	167*81*65mm	
Support USB communication	Yes	
Support WiFi communication	No	Yes

Note①：

Ripple measurement method: noise and ripple are measured at X1 range, AC coupling, 20M

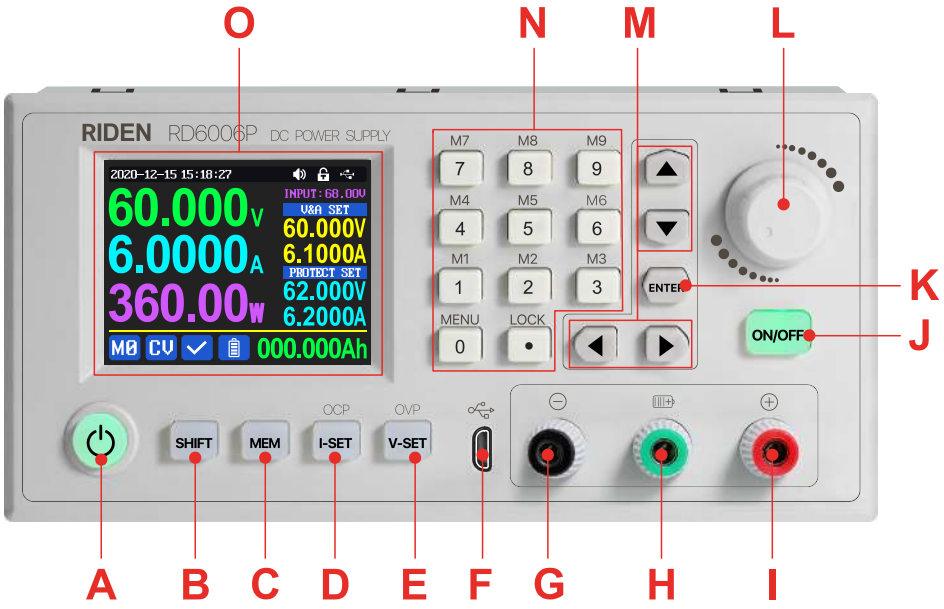
Hz of bandwidth on your oscilloscope with a 0.1uF parallel capacitor at the output terminals

1.2 Core Function

·Keypad + encoder potentiometer combination adjustment
·10 data groups for storage and call out
·2.4 inch HD color display
·Dedicated terminal for battery charging
·Firmware update, support more functions later
·Brand new PC software
·Support WiFi communication(RD6006P-W) /USB communication
·Support Android/ IOS APP
·Support multiple display interfaces

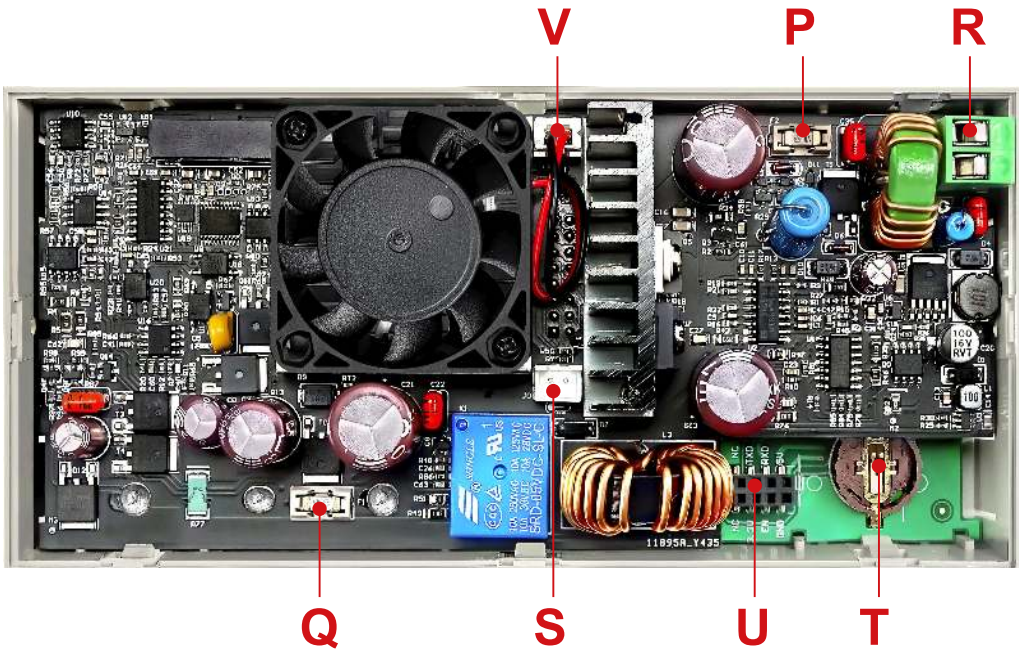
1.3 Panel Instruction

1.3.1 Front Panel



A: Power button	B: SHIFT Second function button
C: Quick storage button	D: Current/Over current protection setting
E: Voltage/Over voltage protection setting	F: Micro USB port
G: Power supply output negative terminal/ Battery charging negative terminal	H: Battery charging positive terminal (Dedicated terminal for battery charging)
I: Power supply output positive terminal	J: Output switch
K: Enter/ Confirm button encoder	L: potentiometer/Cancel button
M: Direction button	N: keypad
O: Screen	

1.3.2 Back Panel



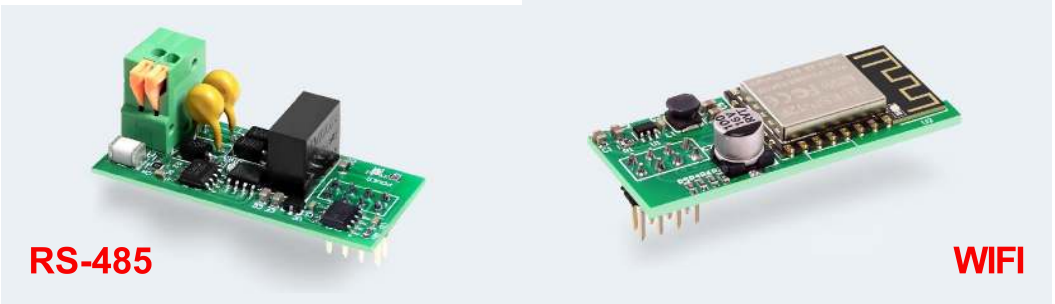
P: Input fuse	Q: Output fuse
R: Power source input interface	S: External temperature sensor interface
T: CR1220 battery socket	U: Communication module interface
V: Fan interface	

NOTE:



Power source input interface must be connected to 7-70V constant DC power source. The external sensor cable (as shown on right) must be connected to the external temperature sensor interface. The fan interface cannot be connected to other fans. When the system temperature is higher than 80℃, the output will be shut down and show OTP on the screen. CR1220 is the clock battery (Please prepare by yourself), it can power on the clock function. Communication interface is a special interface, please don't connect to other modules or cables.

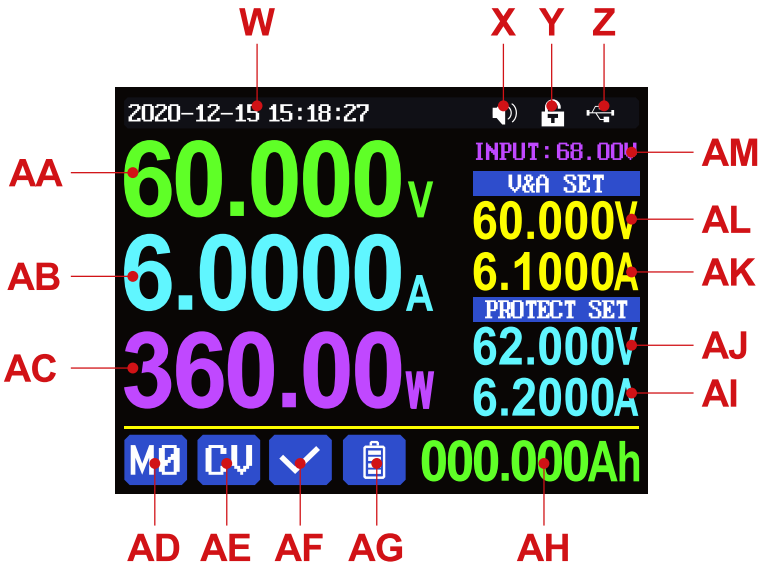
You can see the Wi-Fi module and RS-485 module in the picture below. If you need RS-485 for industrial batch test , if you want to use that, please contact us to see if it supports RS-485.



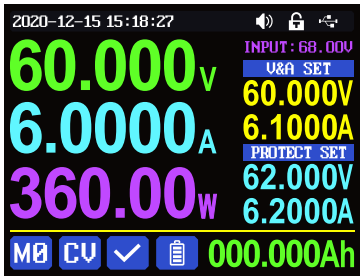
1.4 Operation Instruction

After power-on, it will show boot image first, and then enters the main page.

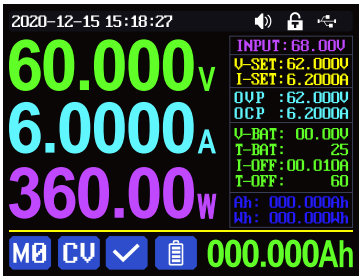
1.4.1 Main Page



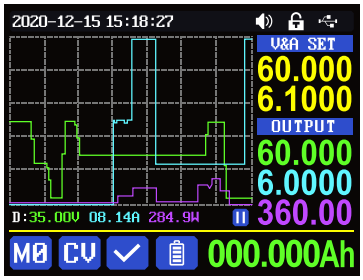
W: Date/Time	X: Button tune
Y: Button lock status	Z: Communication interface
AA: Actual output voltage value	AB: Actual output current value
AC: Output power	AD: Current data group
AE:Constant voltage Constant current status	AF:Protection status indication
AG: Battery charging indication	AH:Battery related information display area
AI: Over current protection value	AJ: Over voltage protection value
AK: Output current preset value	AL: Output voltage preset value
AM: Input voltage	



Traditional Style



Detail Style



Curve Style

At main page you can press button to change the display style between Traditional Style, Detail Style and Curve Style, the display style will not be saved automatically, you need to set default boot display at section 1.4.2.6 Main Page Style Setting.

1.4.2 Operation Introduction

In the menu operation, the icon in red or cursor is the currently selected menu, the icon in blue is not selected, press ENTER to confirm or enter, press the encoder potentiometer to cancel or return, press the direction button to move the cursor or switch menu, rotate the encoder potentiometer to change the setting, the settings will be automatically saved when returning from the menu page. Press and hold the 0 button and power on to restore the factory settings, press and hold the 1 button and power on to restore the factory calibration value, press and hold ENTER and power on to enter the boot mode.

1.4.2.1 Battery Charging Function Introduction

Battery charging operation video：
https://drive.google.com/drive/folders/1g8v_l1X9uwRM1P4GPwKhnP4NopKIUm1s?usp=sharing

After power on, at battery related information display area, external temperature, capacity and energy will loop display. When there is output current: capacity, energy will be automatically accumulated, and automatically cleared after power off.

The green terminal is connected to the positive electrode of the battery, and the black terminal is connected to the negative electrode of the battery. After the battery is correctly connected, the battery charging indicator turns red and the battery is connected. Press ON/OFF to start charging, the battery charging indicator turns green . When the actual output current is lower than 10 mA (charging cut-off current value can be set by user), the output will be shut down automatically. Battery with protection board or low capacity needs to be charged with red and black terminals. The charging voltage and current should be set on your own. When the charging function is not in use, you can connect the green and black terminals with a cable to prevent interference with the battery detection terminal and accidentally turn off the output.

It is strongly recommended to use the original charger to charge the battery. The charging function of this machine can only serve as a temporary replacement, not for long-term use. There is a risk of fire and explosion during the charging process. Non-professionals should not operate.

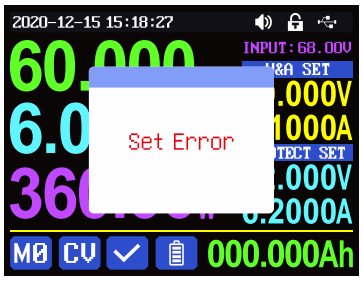


figure 1

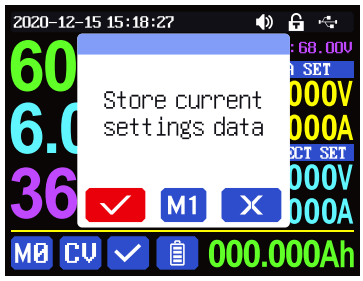


figure 2

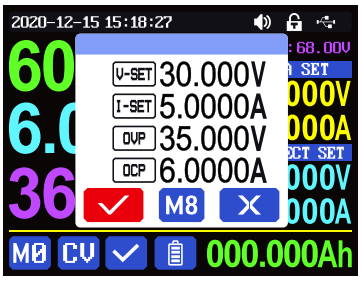


Figure 3

1.4.2.2 Main Page Output Voltage and Current Setting

Output voltage and current setting operation video：
https://drive.google.com/drive/folders/1NZW7k3-Kyc5YgIh-bWn8gBGaY5xo7_Lm?usp=sharing

Press I-SET button to set the output current value, you can use encoder potentiometer to adjust the output value directly, press ◀ ▶ button to move the cursor. Of course you can use keypad to enter the value, and press ENTER to confirm. If you set the wrong value, you can press encoder potentiometer to cancel.

Press V-SET button to set the output voltage value, the operation way is similar to output current setting.

Press SHIFT + I-SET button / SHIFT + V-SET button to set the over current protection/ over voltage protection value. The operation method is similar to output current setting.

When the device is under constant voltage mode, it will show CV, and it will show CC when under constant current mode; when the device works normally it will show ✓ at protection status indication, when the actual output current value is higher than the over current protection value(OCP), the output will be cut off automatically, and show OCP, when the actual output voltage value is higher than the over voltage protection value(OVP), the output will be cut off automatically, and show OVP, when the system temperature is higher than 80℃, the output will be cut off automatically, and show OTP.

1.4.2.3 Data Group Quick Storage and Call out

Data group quick store and call out operation video：
https://drive.google.com/drive/folders/139d28IHpZEgpNEC6pfBVruNF3b9FRVWW?usp=sharing

Press MEM + keypad button 1-9, you can store the output voltage value, output current value, over voltage protection value, over current protection value into the corresponding data group(as shown in figure 2), then press ENTER to confirm, it will show M1 at bottom left, you can press ▶ button and choose “X”, then press ENTER to cancel, after change the setting value it will show M0.

Press SHIFT + keypad button 1-9 to quick call out the saved data (as shown above in figure 3) from the corresponding data group. Press ENTER to confirm, it will show M8, after change the setting value it will show M0. When disable the "Take OK" option, it will be called out directly to change the data setting value, no prompt.

M0 is the default data group, when you edit the settings and press ENTER button or rotate encoder potentiometer to change the setting and press encoder potentiometer to return, it will be stored into M0 automatically, or you go to the data group setting menu, change the setting and press encoder potentiometer to return, it will save too, and it will not save by other settings.

1.4.2.4 Keypad lock and unlock

Keypad lock operation video:
https://drive.google.com/drive/folders/121yIfNLh3099AU4tUkxtC5q34XT3snn1?usp=sharing

Press SHIFT + • to lock or unlock the keyboard. And the keypad will be automatically locked when communication starts, there will be  displayed on the top (cannot unlock manually), and the keypad will be automatically unlocked when the connection disconnected manually, there will be  displayed, the keypad will be automatically unlocked after 3 seconds when the connection disconnected abnormally, and the power off button can be used when the keypad is locked.

1.4.2.5 System Setting

System setting operation video:
https://drive.google.com/drive/folders/1JCPJkD92Iv2Qtplmd6rs1pQmajs1EsVB?usp=sharing

Press SHIFT + 0 to enter the system setting menu, the icon in Red shows the menu being chosen, press ENTER or ▼ to enter the sub-menu, the option in blue is the option being chosen, you can rotate the encoder potentiometer to change setting, and you can press ◀ ▶ button to select menu.



figure 4

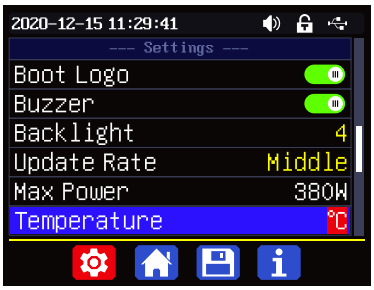


figure 5

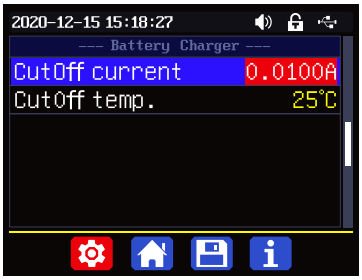


figure 6

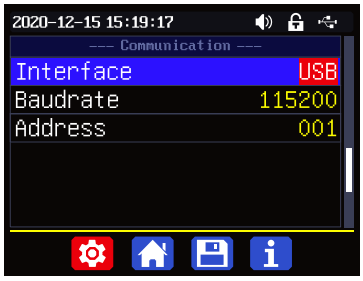


figure 7



figure 8

Press SHIFT + 0 to enter the system setting menu showed in figure 4, press ENTER or ▼ to enter the sub-menu.

Settings Sub-menu:

System language is is set to English by default. You can also set Simplified Chinese, French, Germany and Russian language;

Take OK is set to ON by default, when you quickly call out a data group, there will be a prompt as shown in figure 3, if you set OFF for this option, the settings will be edited directly when call out a data group;

Take Out is set to OFF by default, when call out a data group, it will keep the previous output status, when set it ON, it will output directly when call out a data group.

Boot Power is set to OFF by default, when boot the device the output is cut off, when set it on, it will automatically turn on the output after booting.

Boot Logo is set to ON by default, when boot the device, it will show the boot logo first, then enter the main interface, when set it OFF, it will enter the main interface directly.

Buzzer is set to ON by default,it will show 🔊 on the top, and you can hear the beep when press the button. When set it OFF, it will show 🔇, there will not be beep when press the button.

Backlight is set to level 4 by default, it can be set between level 0-5.

Update Rate is set to Low by default, you can set it low/mid/high, it is the fresh rate of the real output voltage and current.

Max Power is set to 380W by default, you can set it between 1-380W, it is the max output power. The max output is default voltage priority mode, when the setting voltage*setting current is higher than the max power, the device will automatically decrease the output current setting value. When used together with low power

power source, it is recommended to set the value as the rated power of the power source*95%;

Temperature unit is ℃ by default, it can be switched between ℃ and ℉(figure 5);

Battery Charger Sub-menu(figure 6):

CutOff Current is set to 10mA by default and it can be edited, when the real output current is lower than this set value, the output will be cut off automatically.

CutOff Temp. is set to 60℃ by default, when the external temperature sensor detect over 60℃, the output will be cut off automatically.

Communication Sub-menu(figure 7):

Interface is set to USB by default, you can also set it to WIFI/TTL/RS485, USB means the micro USB port, you can see  on the top when set it USB, and when the communication starts, it will show ; You need to insert a WIFI board to use the WIFI function, and it will show  on the top, and when the communication starts, it will show ; TTL is not available now; You need to insert RS485 module to use RS485, and it will show  on the top, and when the communication starts, it will show .

Baudrate is set to 9600 by default, you can set it to 9600/19200/38400/57600/ 115200, under WIFI communication mode the baud rate is 115200 and it cannot be edited.

Address is set to 001 by default, you can set it between 1 and 255;

The Baud rate and address on the device should be same with the information on PC software or APP. You can see more communication at PC software and APP section.

Date and Time Sub-Menu(figure 8):

Date and Time can be set from 2000 to 2100, press  or  you can select the option, and use encoder potentiometer can adjust the value, it will be applied immediately when you change the value, please do not set the wrong time.



figure 9

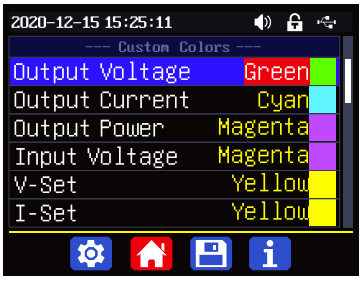


figure 10

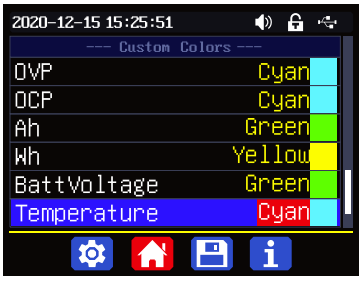


figure 11

1.4.2.6 Main Page Display Style Setting

Main interface display style setting operation video:

https://drive.google.com/drive/folders/1gMkuCZrr_G-PlyHqO-i6fxdS-XRvuOIG?usp=sharing

You can press SHIFT + 0 to enter the system setting menu, then press 

and it will be switched to display style menu: you can press ENTER or ▼ to enter the sub-menu.

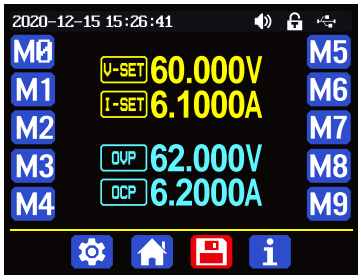
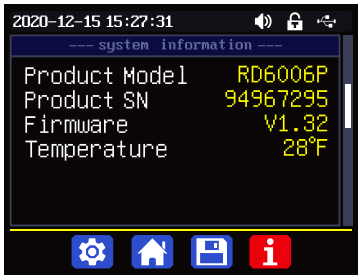
Layout Sub-menu(figure 9):

Digits Style is set to Normal by default, you can set it to Normal/7-Seg V1/7-Seg V2.

Home Style is set to 0(traditional style), you can also set it to 1(Detail Style) or 2(Curve Style).

Custom Colors(figure10):

You can set the the display colors for output voltage, output current, output power.....as shown in figure 10 and figure 11.

		
figure 12	figure 13	

1.4.2.7 Storage Data Setting

Data group setting in manual operation video:
https://drive.google.com/drive/folders/13APYtlRAaMcKmStbWM8toB8oOW5wi4ph?usp=sharing

You can press SHIFT + 0 to enter the system setting menu, and then press ▶ button twice to enter the data storage setting menu as shown in figure12. Press the Enter button to enter the sub-menu, press the direction button to choose the data group, the setting way is same as the operation in Section 1.4.2.2.

1.4.2.8 System Information

System information operation video:
https://drive.google.com/drive/folders/1APFNHtOufuh46rc5i2XTZKrQoTqgHdUr?usp=sharing

You can press SHIFT + 0 to enter the system setting menu, and then press ▶ button three times to enter the system information menu as shown in figure 13. Product Model is the device name, Product SN is product serial number, Firmware is the firmware version, Temperature is the System temperature.

Android APP Instruction

2.1 Mobile Phone APP Installation

This App only supports Android 5.0 to Android 10.0 operating system, and there may be incompatibilities problems between APP and operating system, please install and test the software before buying the product. It will apply for location service, please agree and turn on the location service. After downloading the mobile APP zip-file, please install the APP in file manager. Don't install or remove Wi-Fi module when the powered on, otherwise it will be damaged. This instruction is made for version 1.1.2, there will be little difference between different versions, and we do recommend you to download the latest APP for better experience.

2.1.1 APP Download

You can download the APP in Google Play by searching RDPower.
You can also download the RD60XX APP zip-file in this URL:
https://drive.google.com/drive/folders/1V0l6P1sIJilN1yBOsTO9YGLVdkuO0cX9?usp=sharing

2.2 Installation Introduction

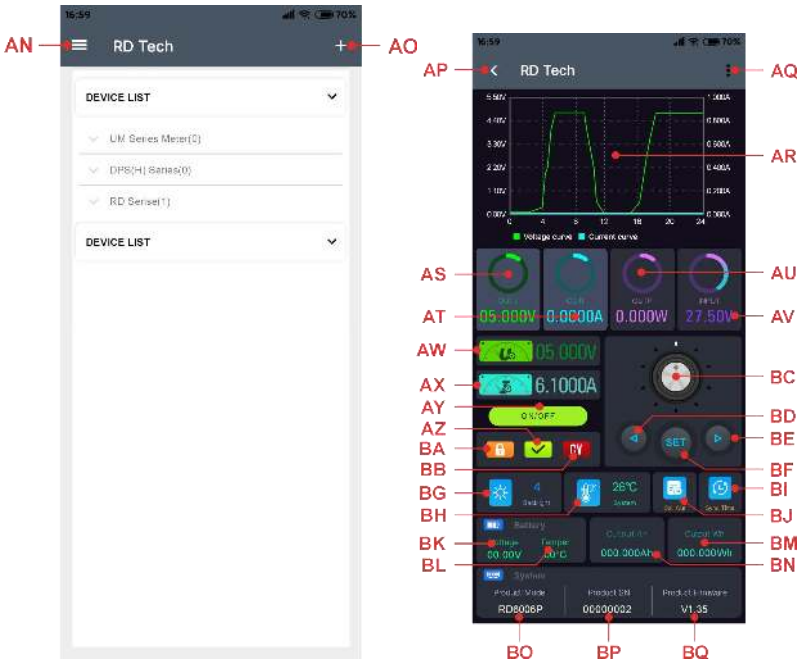
Android APP download and connection video instruction:
https://drive.google.com/drive/folders/15GfqS3vN3prvdVYOT1_yGHjkz0jHk_LO?usp=sharing

2.2.1 APP Update

Click the APP icon, After the APP starts, it will automatically detect whether there is a new version, and it will remind you by popping the window. You need to check if there is a new version by manual detecting.

2.2.2 APP Interface Display

When finish the installation and succeed in connection, it will show the main page as shown in the picture below.



AN: sidebar	BC: setting wheel
AO: add device	BD: move the cursor to the left
AP: return	BE: move the cursor to the right
AQ: more options	BF: set button
AR: curve	BG: screen brightness
AS: actual output voltage	BH: system temperature
AT: actual output current	BI: sync time
AU: actual output power	BJ: data group quick call out
AV:input voltage	BK: battery voltage
AW: preset voltage value	BL: external sensor temperature detecting value
AX: preset current value	BM: accumulated output capacity
AY: ON/OFF button	BN: accumulated output energy
AZ: protection status indication	BO: device
BA: keypad lock indication	BP: product SN number
	BQ: product firmware version

2.2.3 APP Operation

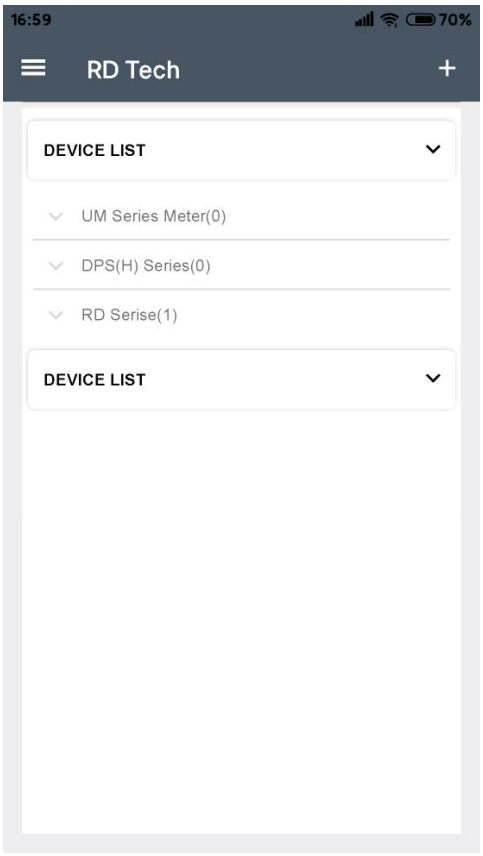
2.2.3.1 Network Distribution



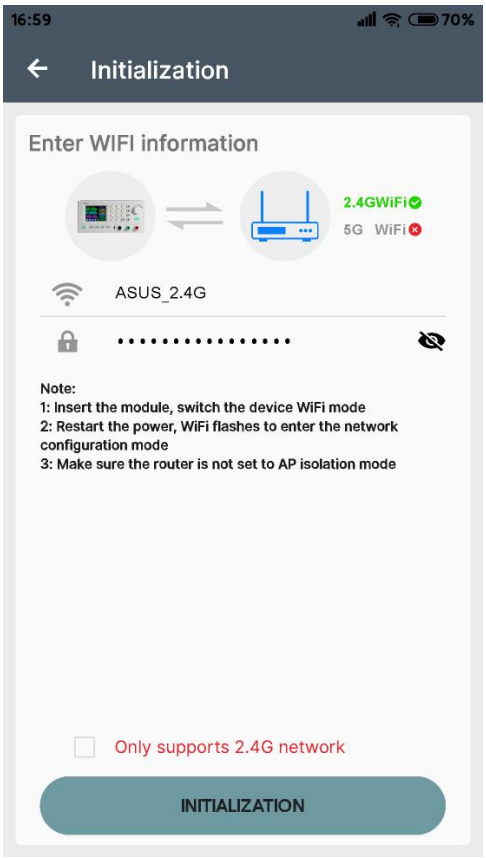
Picture 14

Connect Wi-Fi for the first time, please insert the WiFi board to the right place, then power on RD6006P, you will see the blue LED blinks once. Set the communication interface to WIFI, restart RD6006P, then place the RD6006P and the mobile phone close to the 2.4G router (the mobile phone must also be under the same 2.4G network, and the router must disable the AP isolation function and the WMM function).

RD6006P will wait for the phone to connect as shown in Picture 14. Press **"AO"** (add device) and choose "RD power series", it will show like Picture 15, then enter the WiFi password and confirm you are using 2.4G network as shown in Picture 16. After 10 seconds



Picture 15

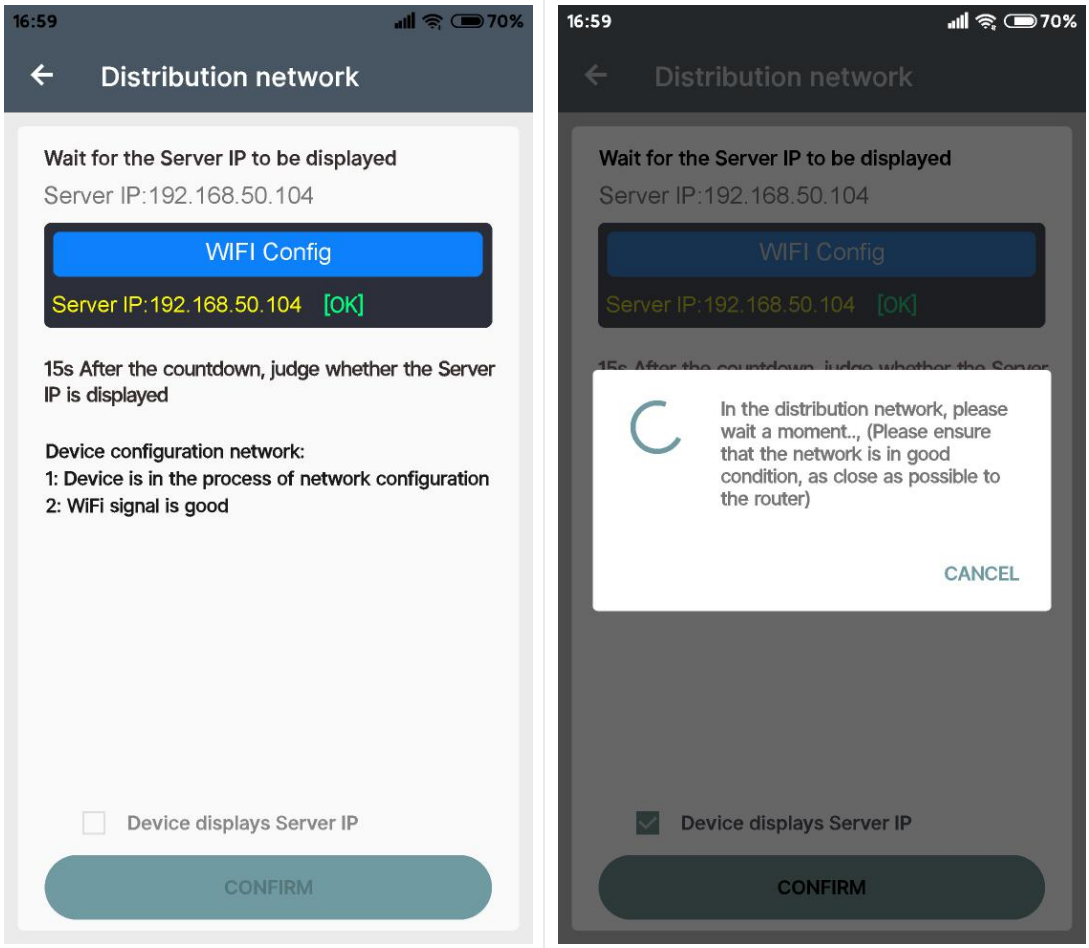


Picture 16

RD6006P will obtain the IP address of your phone(picture 17), if it shows right, confirm that "device display sever IP", and click "Confirm", wait 20s (picture 18)， APP show connection successful, RD6006P will start automatically, the network distribution success, return to the main page and click the connect in the "AQ".



Picture 17



Picture 18

If the distribution network fails, please power off the module and re-operate in the same way (multiple networking failures you can watch the video and try to use the hotspot of the mobile phone to test). If you use Huawei brand phone, please turn off the random MAC address function.

3.2.3.2 Proper Wi-Fi Connection

Android APP download and connection operation video:---

When power on RD6012, it will connect Wi-Fi first, and then detect if it can be connected to APP, and it may not be connected successfully if the phone is under screen-lock status or the APP is running at the background. If the IP address of the phone has changed, you need to press the ◄ button and then press ENTER button to reset the net, repeat 3.2.3.1 operation.

2.2.3.3 APP Operation

Android APP operation video:
https://drive.google.com/drive/folders/1vyIktoZ2ACqg1gW1uw4ZBWh7f_awHRtK?usp=sharing

Click **"AW"** to set the output voltage, and use the wheel **"BC"** to adjust the value, the **"BD"**, **"BE"** to change the position of cursor, click **"BF"** to set the parameter. Click

SHARE in **"AQ"** to exports the voltage-current curve to excel file, up to 24 hours document can be recorded.

NOTE:

1. There are many kinds of Android phone, so the user interfaces maybe different on some brand phones or different scales of the same brand.
2. Application permission requirements, allow the necessary permissions when the APP is installed (allow background running, using Bluetooth, operation on the folder, reading the application list, etc.) and also set the permissions of the APP after installation: Allow background running, never shut down when lock screen, allow self-starting (it is used to prevent the system from forcibly exiting the APP when recording data), etc.

IOS APP Instruction

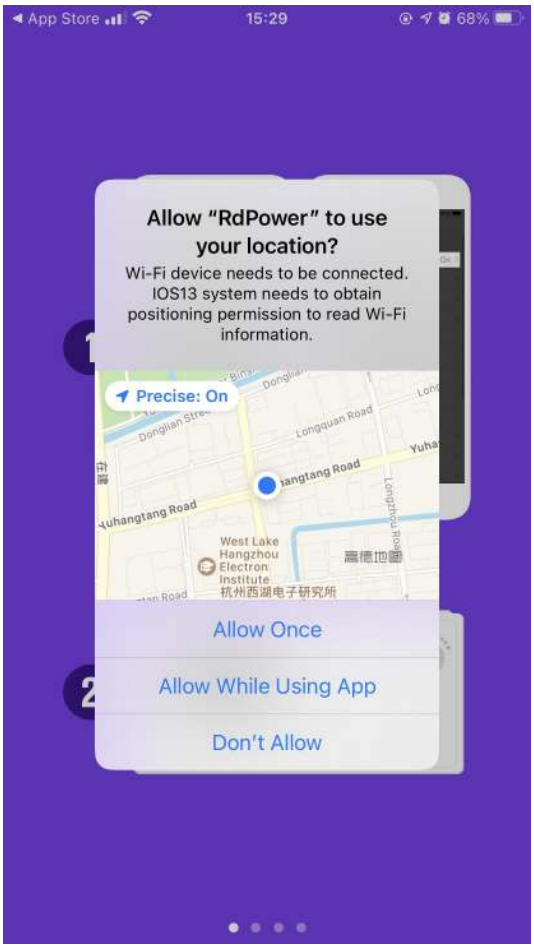
3.1 Mobile Phone APP Installation

3.1.1 APP Download

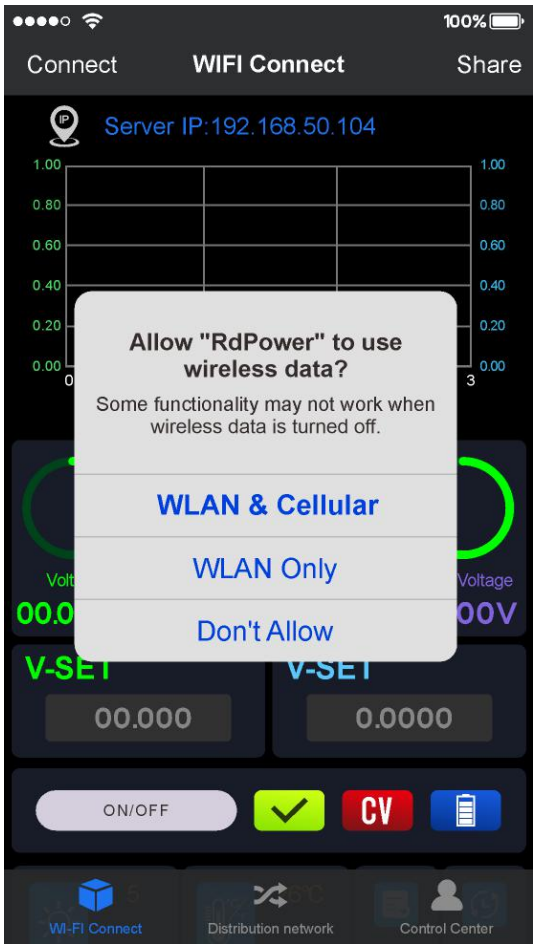
Apple APP only supports IOS10.0-14.3, iphone6 and above models, search for "RDPower" in the Apple store to download. If you must use the software function, please pre-install the test first. To use the WiFi function of the software, you need to apply for location service. Please agree and turn on location in Settings-Privacy. This manual corresponds to the software version 1.1.11, it is recommended to upgrade to the latest software for a better user experience.

3.2 Installation and Operation

When the software is started for the first time, the system may apply for positioning (as shown in Picture 19), select "Allow when using APP", and apply for data when the software is running (as shown in Picture 20), select "Wireless LAN and cellular mobile network".



Picture 19



Picture 20

Apple APP installation and connection process video:

https://drive.google.com/drive/folders/1h6Dbqum3b8uy0Ph7yRd4xhGcx8vHsdCZ?usp=sharing

After the installation is complete, the mobile APP icon is shown in the figure on the right:

3.2.1 APP Update

You can get the latest software from the Apple Store. When the software is updated, you will be prompted to update the version.

3.2.2 UI Instruction

You can see the user interface as shown in Picture below.



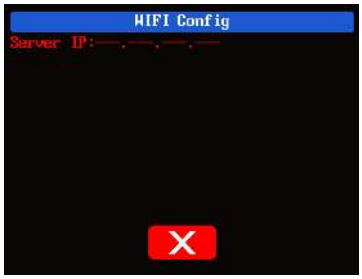
BR: connect/disconnect	CE: screen brightness
BS: export data to mobile phone	CF: system temperature
BT: data curve	CG: data group quick call out
BU: actual output voltage	CH: sync time
BV: actual output current	CI: battery voltage
BW: actual output power	CJ: external sensor temperature detecting value
BX: input voltage measurement value	CK: accumulated output capacity
BY: preset voltage value	CL: accumulated output power
BZ: preset current value	CM: model being connected
CA: output ON/OFF button	CN: product SN number

CB: protection status indication	CO: product SN number
CC: battery status indication	CP: main page
CD: constant voltage/ constant current status	CQ: network distribution page
	CR: control center

3.2.3 APP Operation

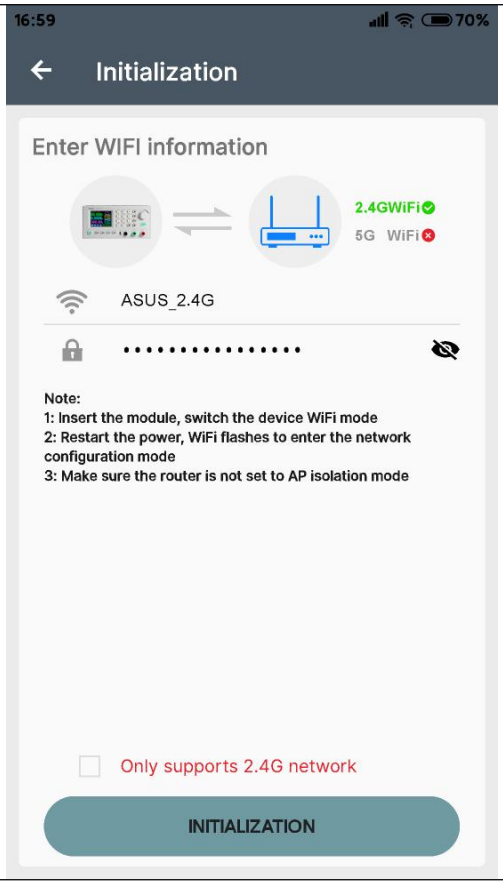
3.2.3.1 Network Distribution

Connect Wi-Fi for the first time, please insert the WiFi board to the right place, then power on RD6006P, you will see the blue LED blinks once. Set the communication interface to WIFI, restart RD6006P, then place the RD6006P and the mobile phone close to the 2.4G router (the mobile phone must also be under the same 2.4G network, and the router must disable the AP isolation function and the WMM function).



Picture 21

RD6006P will wait for the phone to connect as shown in Picture 21. Press **"CQ"** to choose Network distribution, it will show like Picture 22, then enter the WiFi password and click INITIALIZATION. Wait 10 seconds





Picture 22	Picture 23

RD6006P will obtain the IP address of your phone(picture 24), if it shows right, confirm that “device display sever IP”, and click “Confirm”, wait 30s (picture 25) , APP show connection successful, RD6006P will start automatically, the network distribution success, return to the main page and click **connect.**



Picture 24

If the distribution network fails, please power off the module and re-operate in the same way (multiple networking failures you can watch the video and try to use the hotspot of the mobile phone to test).

3.2.3.2 Proper Wi-Fi Connection

When power on RD6006P, it will connect Wi-Fi first, and then detect if it can be connected to APP, and it may not be connected successfully if the phone is under screen-lock status or the APP is running at the background. If the IP address of the phone has changed, you need to press the ◀ button and then press ENTER button to reset the net, repeat 2.2.3.1 operation.

3.2.3.3 APP Operation

IOS APP operation video:
https://drive.google.com/drive/folders/1kwycXmbV_wkSYuT7KxuYsmXHV70KDyiq?usp=sharing

Click **“BY”** / ”**BZ**” text label and enter the value to set the output voltage/ output current, then click at the blank area to return, if you enter a value exceeds the limit, it cannot be applied. Click **“BS”** to exports the voltage-current curve to excel file, up to 24 hours document can be recorded.

Click the personal center to set the software language or get help to use the APP.

PC Software Installation and Operation Instruction

Requirement: Win 7-Win10 system and the computer has Internet connection.

This PC software is designed by Hangzhou Ruideng technology CO., LTD, it has no virus, if your anti-virus software prompts for a virus warning, please allow all its features, otherwise it will affect the normal operation of the software. PC software supports Win7-Win10 system, and there may be incompatibilities problems, if you really need it, please install and test the software before buying the product. This instruction is made for version 1.0.0.9, there will be little difference between different versions, the version below does not support RD6006P. and we do recommend you to download the latest software for better experience.

RD6006P digital power supply file download link:

https://drive.google.com/drive/folders/1nyd7W_JdeQhPLhKdgG_iCRQ3mHZenbIU?usp=sharing

4.1 Software Download

PC software download and basic operation video:

https://drive.google.com/drive/folders/10Op21Q61xOzlPROqGrt0tuMTkzp00aQZ?usp=sharing

4.1.1 Unzip Files

The first time you use this software, you need to install the driver program first, you need to click CH341SER to install the driver, the insert a Micro USB cable into RD6006/RD6006P and wait for the computer to install the driver.

4.1.2 Unzip Files

Unzip the file to Disk(D) of the PC. You need to run Net framework4.7.2.exe to install the .Net environment, then click RidenPowerSupply.exe directly to use the software, please do not delete any files.



4.2 Software Operation

4.2.1 Software Connection

RidenPower Supply

Double click **RidenPowerSupply.exe** to run the PC software.

WiFi connection is a test function, due to poor compatibility with some computers, if you cannot connect PC software via WiFi, please ignore this function. For this function, we do not provide any guarantee and technical support, and we will decide whether to keep this function based on customer feedback.

WiFi connection video link:

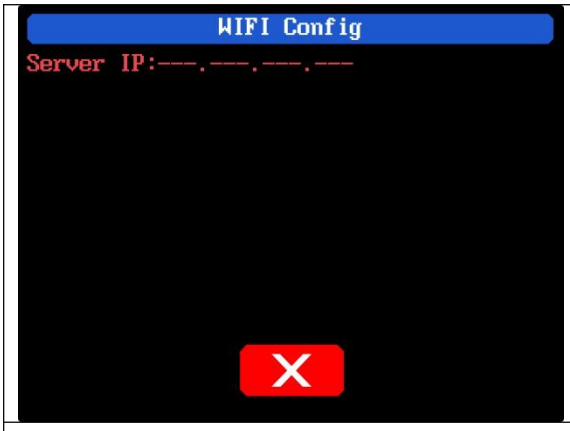
https://drive.google.com/drive/folders/1BZslMRSntMj9Se6hnsYANsv8XAVhIZZi?usp=sharing

Set the RD6006P communication interface to WiFi, and restart, RD6006P displays like picture 25, click "WiFi Network" on the PC software to pop up the WIFI configuration interface (picture 27), click "Initialize" and wait for about 5 -10 seconds, after the RD6006P displays the local IP address (as shown in picture 26), click "Next" and enter the WiFi name and password, then click "Network distribution", wait for about 20 seconds, the PC software prompts that the connection is successful, and then Click "Connect".

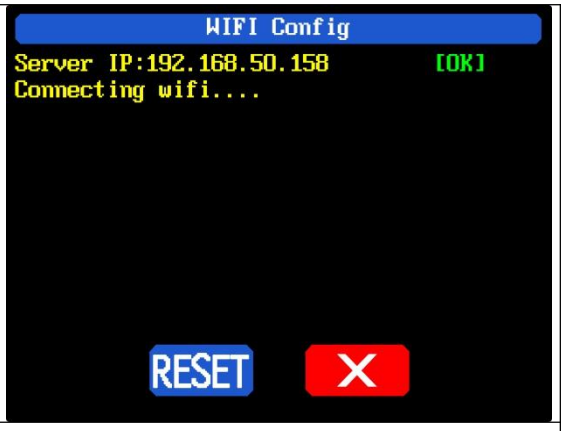


Picture 27

USB connection: Set RD6006P communication interface to USB and connect RD6006P and PC, the PC software prompts the serial port has been updated and licks "**Connect**".



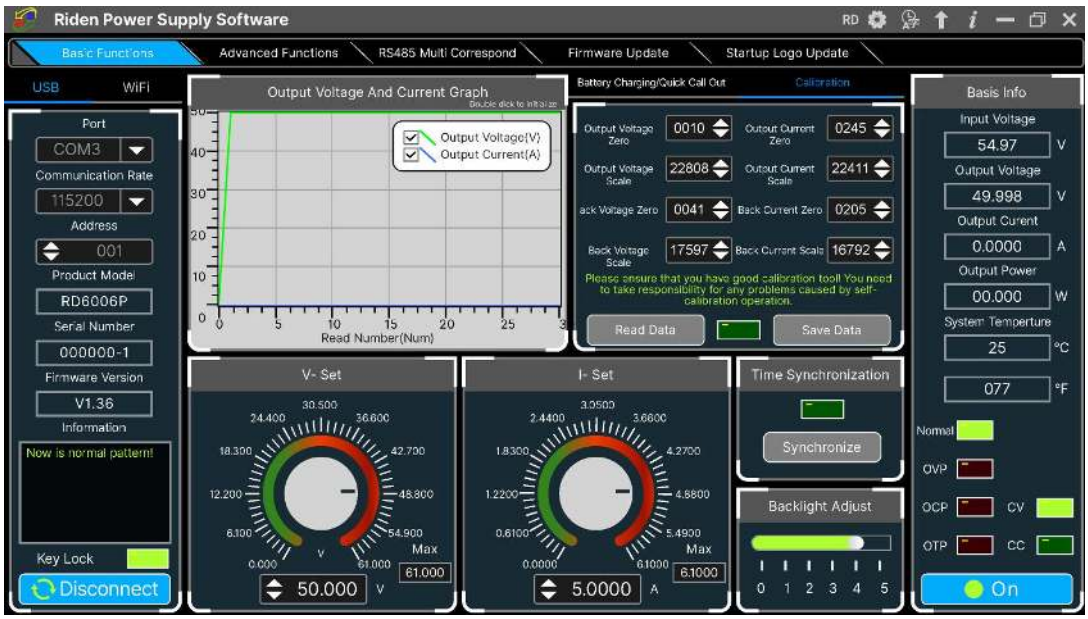
Picture 25



Picture 26

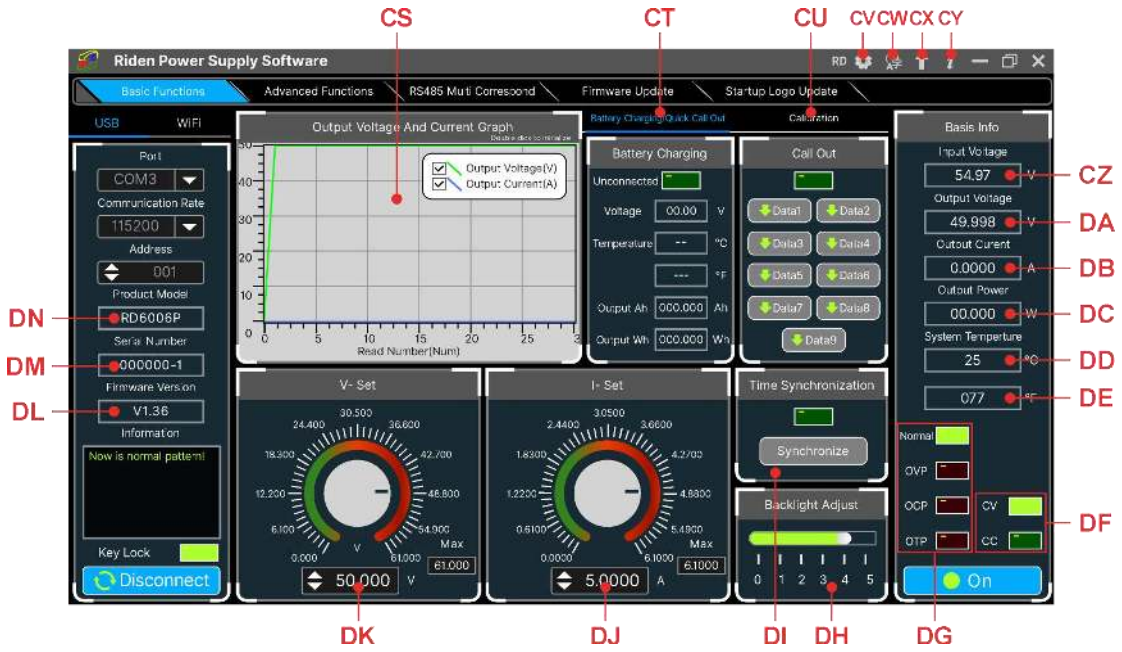
4.2.2 PC Software Operation Instruction

Choose the right communication port, baud rate, slave address (default 001), click **“CONNECT”** to start communication. If the communication succeeds, the power supply button will be locked automatically, the buttons will automatically unlock after 3 seconds of accidental disconnection, and the **“CONNECT”** turns to **“DISCONNECT”**; Click **“ON”** to turn on the output of the power supply, and it will turn to **“OFF”**.



4.3 Functions Introduction

The PC software interface mainly has basic functions, firmware upgrade, Logo upgrade, version update detection and language setting...



CS: Voltage-Current Curve	CT: Battery information/ Data Group Quick Call Out
CU: Calibration	CV: RD/DPS series switch
CW: Language	CX: Software Update
CY: About	CZ: Input voltage
DA: Actual Output Voltage	DB: Actual Output Current
DC: Actual Output Power	DD: System Temperature(℃)
DE: System Temperature(℉)	DF: Constant Voltage/ Constant Current Status
DG: Protection Status Indication	DH: Screen Brightness Setting
DI: Synchronize System Time	DJ: Output Current Preset value
DK: Output Voltage Preset value	DL: Firmware Version
DM: Serial Number	DN: Product Model

4.3.1 Basic Functions

PC software operation video:
https://drive.google.com/drive/folders/1rl-CCOzbFlAONjRfrOpbNsK8rrCGVoKa?usp=sharing

The basic functions of PC software: voltage/current preset, data group quick call out, calibration fine tuning, brightness setting, voltage and current curve exporting. You can rotate the wheel or enter the value to set the voltage and current, the graph above the button shows the real-time voltage and current curve. You can zoom in and out the curve by using the mouse wheel, double click the curve to auto adjusts the axis, you can right click on the curve to clean the curve or export the curve data to picture or excel.

4.3.2 Calibration

The calibration fine-tuning function needs to be operated by a professional electronic person who has more than five and a half multimeter. It will change the system setting, incorrect operation may exceeds the hardware limit and cause damage, and the resulting damage is not covered by the warranty! The limit error of the product is generally much smaller than the nominal error, when the error is close to or even higher than the nominal error, you need to check if the measuring instrument is accurate.

RD6006p calibration operation video:

https://drive.google.com/drive/folders/1WEusRYtpn94BFjyEQjrtsnzTo1K6hYcw?usp=sharing

Click **"Calibration"** and enter the password "168168", you can enter the Calibration Fine Tuning page (if you enter the password, by default you have accepted the above red letter agreement). It can read the calibration data after connection; click the arrow to fine tuning the data. According to the linear function y=kx+b, the constant b is equivalent to the zero value, the slope k is equivalent to the proportional value, adjust this two values so that the data will be close to the real test value.

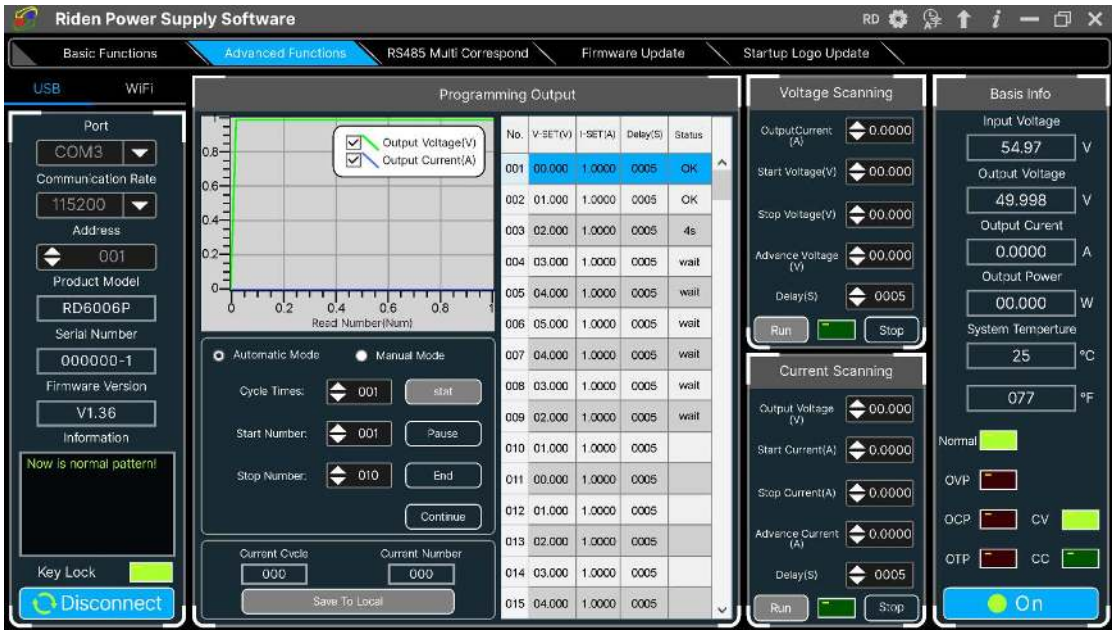
Set the output voltage at 1V, adjust the output voltage zero point to make the multimeter display close to 1V, and then set the output voltage at 30V, adjust the output voltage proportional value to make the multimeter display close to 30V. In the same way you can set 0.1A and 3A output current to calibrate the zero point and proportional value of the output current.

Set the output voltage at 1V and calibrate the actual output voltage zero point to make the actual output voltage displayed on RD6012 close to the value on multimeter. You can set 30V and calibrate the proportional value of actual output voltage. In the same way you can set 0.1A and 3A to calibrate the zero point and proportional value of the actual output current. (This section does not provide technical support. If you do not understand, please check the related information).



4.3.3 Advanced Function

You can set the output voltage and current by chart in the advanced function page, you can set every step between 1 and 9999 seconds, you can set 200 steps max, it can output automatically or manually. You cannot choose other operation page when it performs programming output or other operations, you can only switch other page when it ends.



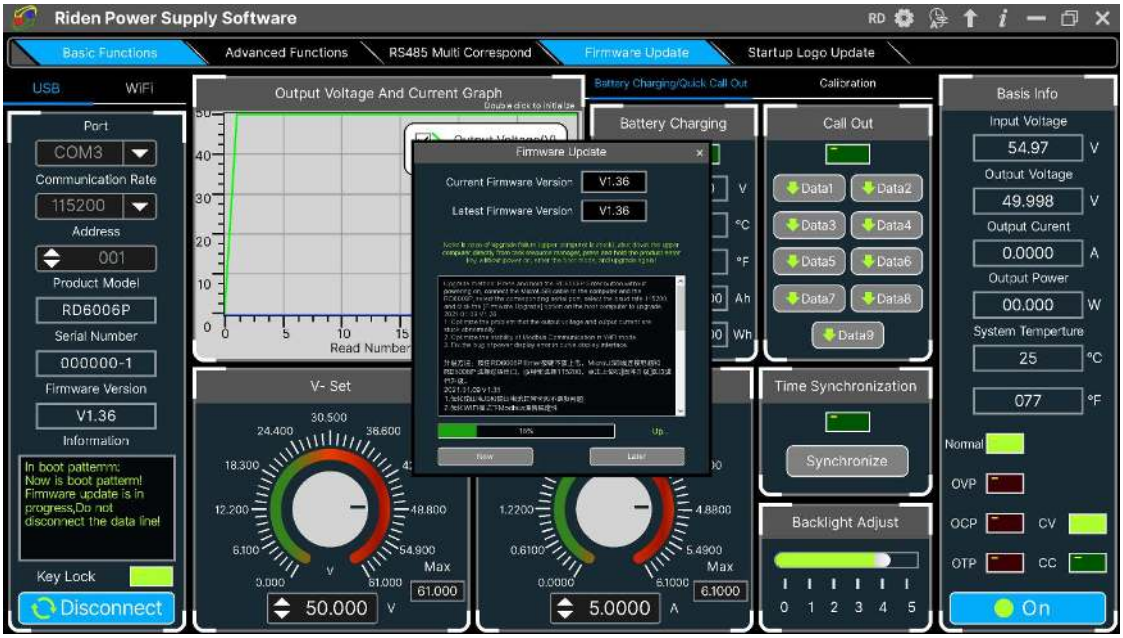
4.3.4 RS485 Multiple Devices Communication

Coming soon

4.3.5 Firmware Update

Firmware update operation video:
https://drive.google.com/drive/folders/19A8Rha_sWYuJ6nMGB7S9S7LuoNepe4by?usp=sharing

Press and hold ENTER and power on RD6006P, enter the boot mode, then connect it to computer, there will be “boot mode” in the mode information text box, then click **“Firmware Update”**, a firmware update prompt will pop up on the interface, and click “**Now**” to upgrade. (You can update the firmware under the normal mode, if it cannot be started up normally, you should press and hold the **“ENTER”** button and power on, update it under boot mode. It doesn’t support firmware update under WiFi connection mode).



During the firmware upgrade process, the interface is displayed as follows:



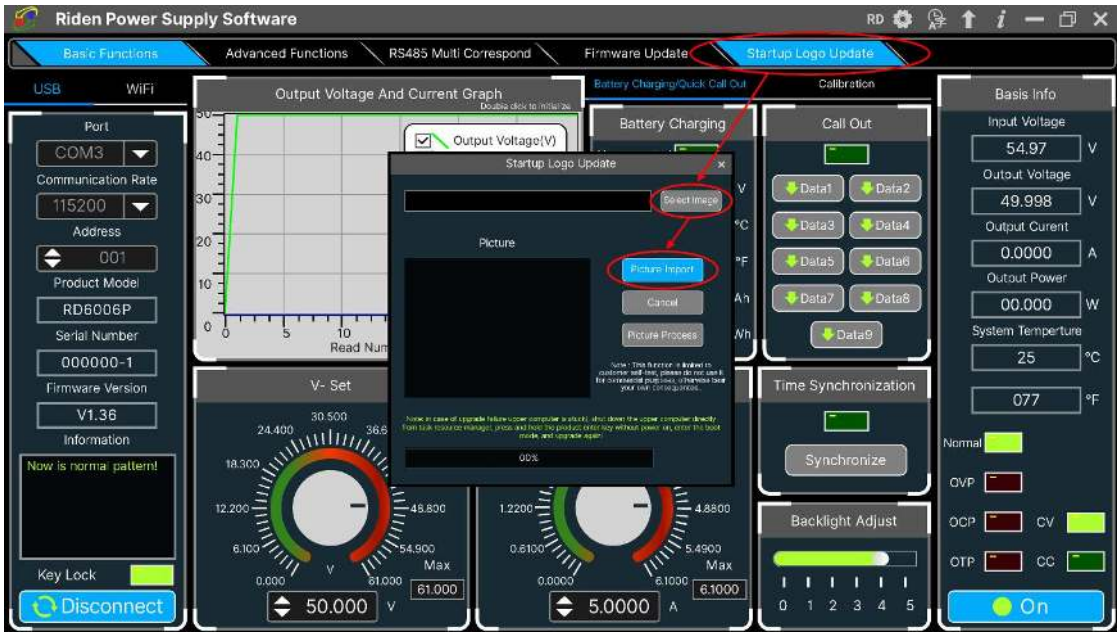
4.3.6 Boot Logo Update

Boot logo setting video:
https://drive.google.com/drive/folders/1J0iOyxZ8DSJaDQD2xgrlukBwJBELQBzf?usp=sharing

Click **“Start Logo Update”**, a Logo upgrade prompt will pop up on the page, please select a picture with a size of 320x240 and a resolution of 96dpi. Some logo samples can be used in the installation package.



Click “Picture Import” and RD6006 will reboot automatically.



4.3.7 Version Update Detection

Click **“Software Update”,** the software will automatically detect if there is a new version, if so, an update prompt will pop up on the interface.



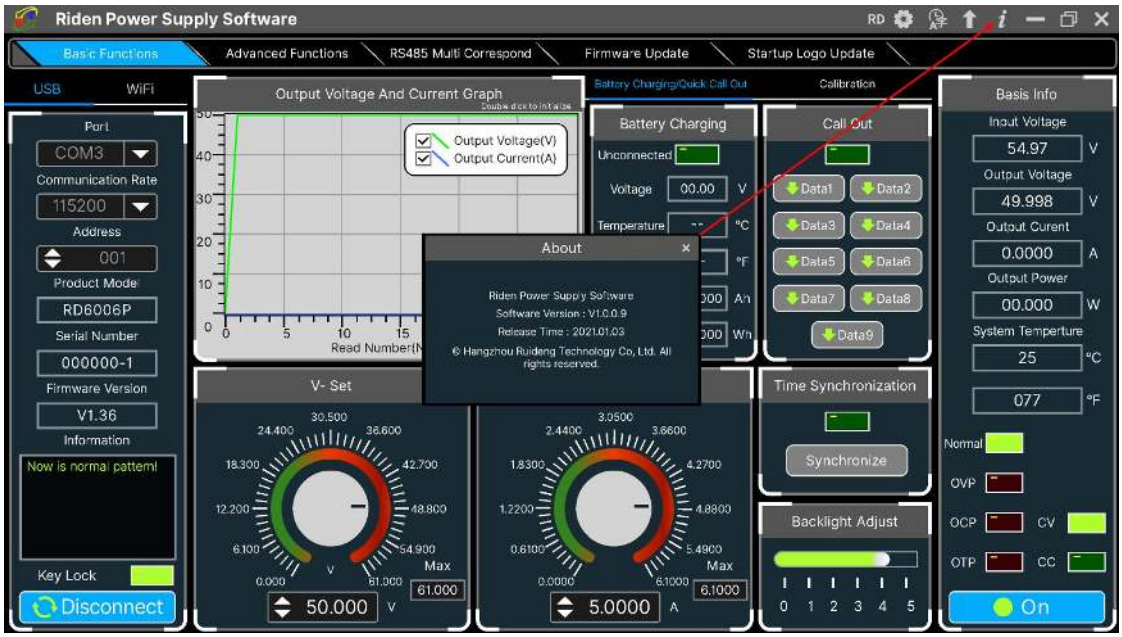
4.3.8 Language Setting

Click **“Language”**, a language setting prompt will pop up on the interface, you can choose Simplified Chinese, English, France and German.



4.3.9 About

Click **“About”**, you can check the version number, publish time and copyright Information.


Riden Power Supply Software
Basic Functions
Advanced Functions
RS485 Multi Correspond
Firmware Update
Startup Logo Update
USB
WiFi
Port
COM3
Communication Rate
115200
Address
001
Product Mode
RD6006P
Serial Number
000000-1
Firmware Version
V1.36
Information
Now is normal pattern!
Key Lock
Disconnect
Output Voltage And Current Graph
Output Voltage(V)
Output Current(A)
Read Number
Battery Charging/Quick Call Out
Calibration
Battery Charging
Unconnected
Voltage
00.00
V
Temperature
°C
°F
Ah
Wh
About
Riden Power Supply Software
Software Version : V1.0.0.9
Release Time : 2021.01.03
© Hangzhou Ruideng Technology Co, Ltd. All rights reserved.
Call Out
Data1
Data2
Data3
Data4
Data5
Data6
Data7
Data8
Data9
V- Set
50.000
V
61.000
Max
A- Set
5.0000
A
6.1000
Time Synchronization
Synchronize
Backlight Adjust
Basis Info
Input Voltage
54.97
V
Output Voltage
49.998
V
Output Curent
0.0000
A
Output Power
00.000
W
System Temperture
25
°C
077
°F
Normal
OVP
OCP
CV
OTP
CC
On

Appendix

Appendix 1: Common Battery Voltage Comparison Table

Battery Type	Nominal Voltage (V)	Max Voltage (V)	Min Voltage (V)	Application	Characteristics
LiCoMnNiO2	3.7	4.2	3	Digital Device	High capacity, rechargeable
Lithium Phosphate Battery	3.2	3.65	2.5	Electric bike / electric tool	Large discharge current, rechargeable
Lead Storage Battery	2	2.4	1.75	Car / electric bike	Inexpensive rechargeable
Dry Battery	1.5	--	0.9	Widely used	Inexpensive widely used not rechargeable
NICD Battery	1.25	1.5	1.1	Toy	Rechargeable Inexpensive Memory effect
Ni-MH Battery	1.2	1.4	0.9	Toy/Shaver	Rechargeable No memory effect

Appendix 2: Common Battery Voltage Comparison Table

Nominal Voltage	Battery Type	Number of batteries connected in series	Discharge termination voltage(V)	Charging limit voltage(V)
72V	LiCoMnNiO2	20	60	87
	Lithium Phosphate Battery	24	60	87.6
	Lead Storage Battery	6	63	86.4
64V	Lithium Phosphate Battery	21	52.5	76.6
60V	LiCoMnNiO2	17	51	71.4
	Lithium Phosphate Battery	20	50	73
	Lead Storage Battery	5	52.5	72
48V	LiCoMnNiO2	14	42	58.8
	Lithium Phosphate Battery	16	40	58.4
	Lead Storage Battery	4	42	57.6
36V	LiCoMnNiO2	10	30	42
	Lithium Phosphate Battery	12	30	43.8
	Lead Storage Battery	3	31.5	43.2
24V	LiCoMnNiO2	7	21	29.4
	Lithium Phosphate Battery	8	20	29.2
	Lead Storage Battery	2	21	28.8