



## User manual

**AX-B3005S AX-B3010S AX-B6005S AX-B12003S**

**DC REGULATED POWER SUPPLY**



## WARNING

- Non-professional charging equipment, please use it under human condition
- Use under professional guidance.
- Non-professionals are not allowed to use it alone.
- Minors are not allowed to use.
- Please make sure the input voltage is correct to avoid accidents.

### 1. Safety brief

This manual contains important safety instructions that must be followed when operating the DC regulated power supply. To ensure your personal safety and ensure that this product operates in the best environment, please read this manual carefully before use.

When receiving a brand new power supply, you need to make necessary inspections to ensure the normal operation of the instrument.

1. Check for any damage during transportation.
2. Check whether all accessories are complete.
3. Check whether the output voltage and output current are normal after turning on the device.

If any problems are found, please contact the dealer immediately

### 2. Safety symbol

The following safety symbols will appear in this manual or on the machine.

|                                                                                     |                   |
|-------------------------------------------------------------------------------------|-------------------|
|  | Attention         |
|  | High voltage      |
|  | Double insulation |

Warning:

- Do not use damaged equipment. Before use, check whether the equipment shell is intact and there are no cracks. It is prohibited to operate this equipment in places where there are explosive gases, vapors, dust, humidity, acidic environments or high temperatures.
- The power cord should be selected with the appropriate specification of wire, and all load wires must be able to withstand the maximum short-circuit output current of the power supply and not overheat. To reduce the risk of fire and electric shock, do not let the power supply voltage fluctuate by more than 10% of its operating voltage range.
- If using this power supply to charge a battery, pay attention to the positive and negative polarities of the battery when wiring, otherwise it will cause the power supply to burn out!
- Do not replace equipment parts by yourself or carry out any unauthorized modifications. When the detachable



cover is not installed or is loose, it is prohibited to use this equipment.

- It is strictly prohibited to use this equipment on life support systems or other equipment with safety requirements. There is a risk of electric shock, so please ground the equipment. This product has a protective ground connection: To minimize the risk of electric shock, the equipment, power cord, and ground wire must be firmly connected to the ground (safety ground) terminal (power socket or AC distribution box). Disconnecting the connection of the ground protection terminal will lead to a potential electric shock hazard and may cause personal injury or death.
- Before starting the machine, please confirm that all safety precautions have been taken and all wiring has been completed. All wiring operations must be performed by qualified personnel who are familiar with the relevant risks. Improper operation may lead to fatal injury and equipment damage.
- After turning off the equipment, there may still be a dangerous voltage remaining on the electrodes. Do not touch the electrodes immediately. Please confirm that there is no dangerous voltage on the electrodes or induction terminals before making contact.
- If the equipment is not used in the manner specified by the manufacturer, the protection functions provided by the equipment may fail.
- Please always use a dry cloth to clean the equipment shell, and never clean the inside of the instrument.
- Do not block the ventilation holes of the equipment.

### 3. Product brief

Adjustable DC regulated power supply is specially designed for laboratories, schools and students. Output voltage and current are continuously adjustable between 0 and nominal values.

The stability and ripple factor of the power supply are very good and have a perfect protection circuit. Can work at full load for a long time. This power supply can be used as both a regulated power supply and a regulated current supply.

### 4. Specification

Working Temperature: 0°C~40°C; Relative Humidity: <80%RH

Storage Temperature: -10°C~70°C; Relative Humidity: <70%RH

Constant Voltage State: Voltage stability 1%+30mV

Load stability 1%+30mV

Ripple noise 50mVrms (valid value)

Constant Current State: Current stability 1%+30mA

Load stability <1%+30mA

Ripple noise 50mArms (valid value)

**The above parameters are measured at an ambient temperature of 25±5°C, relative humidity: <80%RH, and preheated for 30 minutes. The actual parameters will vary slightly.**

(The above technical index parameters are the general technical standards. If there are other marked technical parameters on the panel instruction page, the panel instruction page shall prevail.)

### 5. Work requirement

1. AC input: Please ensure the input voltage of this product (please refer to the input voltage on the panel instruction page).
2. Do not use in an environment where the temperature exceeds 40 degrees Celsius. The cooling fan is located at the



rear of the equipment, and there should be enough space for heat dissipation.



Warning

Incorrect AC voltage input can cause serious damage to the equipment. Please ensure the required input voltage value

## 6. Operation instruction

There are two types of power output modes: constant voltage output (CV) and constant current output (CC). The output mode is determined by the voltage and current values set by the user and the load connected by the user. The output voltage or current value of the power supply will not exceed the voltage and current values set by the user. In the constant voltage mode, the output voltage value is equal to the voltage value set by the user. In the constant current mode, the output current value is equal to the current value set by the user.

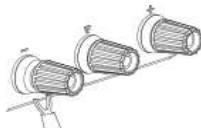


Attention

In actual CV operation, if the load resistance decreases and the output current increases to the set current value, the power supply will automatically switch to the CC mode. When the load resistance value continues to decrease, the current will remain at the current set value and the voltage will decrease proportionally. At this time, increase the load resistance or increase the current setting value to restore the CV output state.

## 7. Connect the load

1. Turn the terminal knob counterclockwise.
2. Insert the load terminal.
3. Turn the terminal knob clockwise.
4. The banana plug can be directly inserted into the terminal hole.





Improper connection may damage the power supply and the load connected to the power supply. When connecting a battery load, do not reverse the polarities of “+” and “-”, otherwise the power supply may be damaged.

## Attention

When the power supply is switched between the constant voltage and constant current states with the change of the load.

The intersection point between the constant voltage mode and the constant current mode is called the conversion point. For example, if the load makes the power supply work in the constant voltage mode, a constant voltage is output. As the load increases, the output voltage will remain unchanged and the output current will increase. When the current value reaches the set current limiting value, the power supply will automatically switch to the constant current mode. The output current remains stable and the output voltage decreases proportionally with the further increase of the load. The conversion between constant voltage and constant current is indicated by the LED on the front panel.

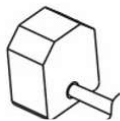
The CV indicator light is on when it is in constant voltage, and the CC indicator light is on when it is in constant current.

## 9. Fuse replacement

If the fuse blows, the power supply will stop working. To find and correct the cause of the fuse blowing, replace the fuse with one of the same specification.

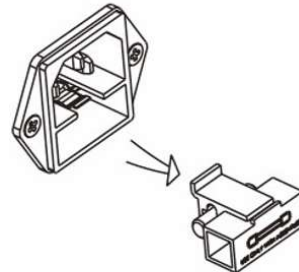


Remove the power plug first, then open the fuse cabin according to the illustration.



Fuse cabin is in the power socket.

Replace the fuse of same specification, then put the fuse cabin back.



**HIGH VOLTAGE!**  
**DANGER!**

For effective safety protection, it is only necessary to replace the fuse of a specific specification. Before replacing the fuse, the power must be turned off and the power cord must be unplugged from the power outlet.

## 10. Product Maintenance

1. Please disconnect the power supply when the machine is not in use.



2. Please unplug the power plug before cleaning the machine.
3. Do not use hydrocarbons, chlorides or similar solvents, and also do not use abrasive cleaners when cleaning the machine.

## 11. Product warranty

1. This product is offered free maintenance service within one year from the date of purchase. Except in the following cases:

- A: Lack of this product warranty card
- B: Failures caused by improper use, such as improper handling and improper repair, modification or adjustment of the device.
- C: Consumable materials are not covered by the warranty.
- D: Naturally irresistible disasters such as floods, fires, earthquakes, etc.

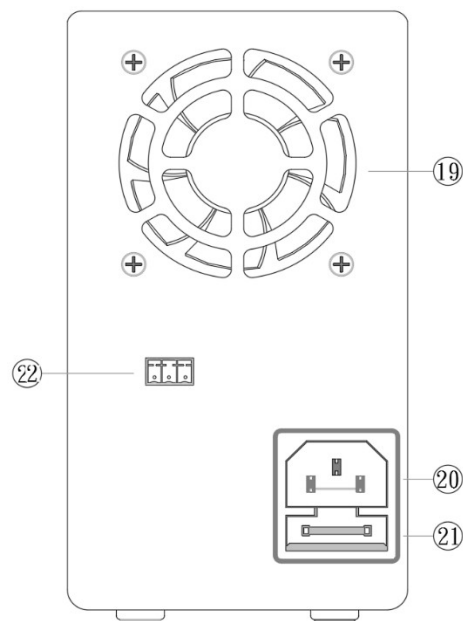
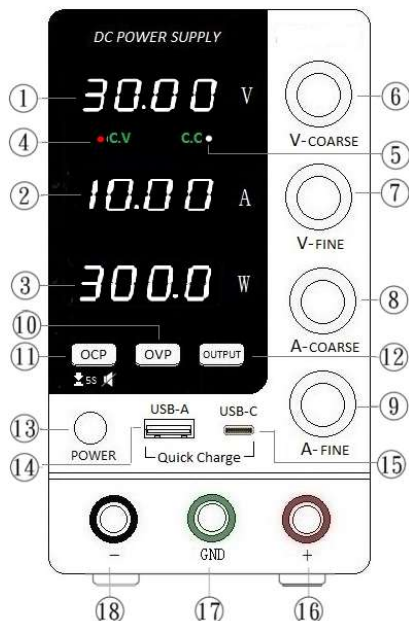
E: Use it outside the working environmental conditions required by the product and in a humid, acidic and polluted environment. (Product environmental conditions: working temperature: 0°C 40C, working humidity: <80%RH, storage temperature: -10°C + 70°C)

2. Maintenance costs are charged for repairs that exceed the warranty period, and the costs incurred for maintenance are the responsibility of the user.

## 12. Packing List

1. 1x power supply
2. 1x power cord

## 13. Panel instruction



- 1 Output Voltage Display
- 2 Output Current Display
- 3 Output Power Display

- 4 Constant voltage Indicator
- 5 Constant current Indicator
- 6 Voltage Coarse Tuner





- |                                                                |                                  |
|----------------------------------------------------------------|----------------------------------|
| (press down to select cursor position)                         | 13 Power Switch                  |
| 7 Voltage Fine Tuner                                           | 14 USB-A Charging port           |
| (press down to select cursor position)                         | 15 USB-C (TYPE-C) Charging port  |
| 8 Current Coarse Tuner                                         | 16 + Positive Polarity ( Red )   |
| (press down to select cursor position)                         | 17 Grounding ( Green )           |
| 9 Current Fine Tuner                                           | 18 - negative Polarity ( Black ) |
| (press down to select cursor position)                         | 19 Temperature controlled fan    |
| 10 OVP switch                                                  | 20 Power Socket                  |
| 11 OCP switch                                                  | 21 Fuse Box                      |
| (Press and hold for 5 seconds to turn off or start the buzzer) | 22 USB Port (Optional)           |
| 12 Output on/off button                                        | RS-485 Port (Optional)           |
|                                                                | RS-232 Port (Optional)           |

Input Voltage: 230V±10% 50Hz (115V±10% 60Hz)

Product Dimension: Length 218mm \* Width 85mm \* Height 155mm

Product Weight : 1.2 Kg

Display Resolution : Voltage : 00.01V Current : 0.001A

#### 14. Specification

| Model      | Output Voltage(V) | Output Current(A) | Fuse          |               |
|------------|-------------------|-------------------|---------------|---------------|
|            |                   |                   | AC 115V input | AC 230V input |
| AX-B3005S  | 0~30V             | 0~5A              | 5A            | 3A            |
| AX-B3010S  | 0~30V             | 0~10A             |               |               |
| AX-B6005S  | 0~60V             | 0~5A              |               |               |
| AX-B12003S | 0~120V            | 0~3A              |               |               |

Example of voltage and current adjustment:

Set the voltage value to 5V and the current value to 5A

1. Turn on the power switch
2. Adjust the voltage adjustment knob to 5V, and alternately use the voltage coarse adjustment knob and voltage fine adjustment knob
3. Adjust the current adjustment knob to 5A, and alternately use the current coarse adjustment knob and current fine adjustment knob





4. Connect load to use and press OUTPUT button to the ON state,

Reminder: When adjusting the voltage/current settings, press down on the voltage/ current knob to select the cursor position

## 15. Operation method:

**1 Power On:** Press the "POWER" button to turn on the power., the screen will display the previous voltage and current values.

**2 Voltage setting:** You can set the voltage by rotating the "VOLTAGE" encoder switch. When entering the voltage setting, the current "digit" being set will blink to indicate. Rotate clockwise to increase the value and counterclockwise to decrease it. Press the encoder switch to move the cursor position. Blinking stops after 5 seconds of completing the voltage setting.

Press and hold the "V-FINE" button for 5 seconds to turn on or off the buzzer

**3 Current setting:** You can set the current by rotating the "CURRENT" encoder switch. When entering the current setting, the current "digit" being set will blink to indicate. Rotate clockwise to increase the value and counterclockwise to decrease it. Press the encoder switch to move the cursor position. Blinking stops after 5 seconds of completing the current setting.

**4 OCP Short Circuit Protection:** Short press the "OCP" button to enable or disable the OCP short circuit protection alarm function. Press and hold the "OCP" button for 3 seconds to enter the OCP setting state. Use the current adjustment knob to set the current value of OCP. When OCP is enabled, an alarm will sound when an external load short circuit or overcurrent occurs, and the machine will stop outputting, effectively protecting the external load. At this time, press the OUTPUT button to clear the OCP alarm but still set the OCP. If the OCP button is pressed, both the OCP setting and alarm will be stopped.

**5 OVP overvoltage protection function:** Short press the "OVP" button to enable or disable the OVP overvoltage protection function. Press and hold the "OVP" button for 3 seconds to enter the OVP setting state. You can use the voltage adjustment knob to set the voltage value of the OVP. When OVP is enabled, when the load voltage exceeds the set voltage, the machine will stop outputting and issue an alarm, effectively protecting external loads. At this time, press the OUTPUT button to clear the OVP alarm but still set the OVP. If the OVP button is pressed, both the OVP setting and alarm will be stopped.

**6 OUTPUT On/Off:** Short press the "OUTPUT" button to switch the power supply output on or off.

**7 The USB charging function:** The power supply has USB-A and USB-C (TYPE-C) charging ports, When used separately, it's fast charging mode; when used simultaneously, it's normal charging mode.

