In order to better use the power supply, please read the user manual carefully before using and keeping it properly.

Warning: Do not connect any load to the power supply before it's turned on. Likewise, make sure to disconnect the load before shutting down the power supply. Damages to the power supply can happen if you do not follow this. Such damages are not under warranty.

Warning: If you are running inductive load like magnetic coils, DC motors, stepper motors, etc., make sure to change the voltage/current slowly, and NEVER turn the power supply on or off with a inductive load connected!

1. Overview

The power supply is specialized designed for laboratory, school and production line. The output voltage can continuously be regulated from 0 to nominal voltage value. So is the output load current. The stability and ripple factor of the power supply are suitable. Also it has prefect overload protecting circuit. It can act as both voltage regulation power supply and current regulation power supply.

2. Specifications

2.1 Rated operating condition and dimensions

Power supply voltage：220 V/110V±10% 50Hz/60Hz (setting switch at the back)

Operating condition：

Temperature: 0^0C to 40^0C

Relative humidity: <80%

Storage condition：

Temperature:-10^{0}C to 70^{0}C

Relative humidity: <70%

Know the Rated Output, Dimensions, and Weight from Form1

2.2 Voltage regulation working condition

(1) The output voltage can continuously be regulated from 0 to nominal voltage value.

Mode	Rated Output		Dimension
	Voltage(V)	Current(A)	D×W×H(mm)
PS-302D	0-30V	0-2A	285×128×145
PS-303D	0-30V	0-3A	285×128×145
PS-305D	0-30V	0-5A	285×128×145
PS-6402D	0-64V	0-2A	285×128×145
PS-6403D	0-64V	0-3A	285×128×145

(2) Voltage stability:

Power stability<0.01%+3mV

Load stability :< 0.01%+3mV (Max. current<3A)

Load stability :< 0.01%+5mV (Max. current>3A)

(3) Recovery time :< 100μS (load-variant50%, min. load current 0.5A)

(4) Ripple & noise :< 0.5mVrms (5Hz-1MHz) (Max. current <3A)

<1.0mVrms (5Hz-1MHz) (Max. current >3A)

(5) Temperature coefficient: < 300PPM/^{0}C

2.3 Current regulation working condition

(1) The output current can continuously be regulated from 0 to nominal current value.

(2) Current stability

Power stability :< 0.2%+3mA

Load stability :< 0.2%+3mA

(3) Ripple & noise :< 3mArms

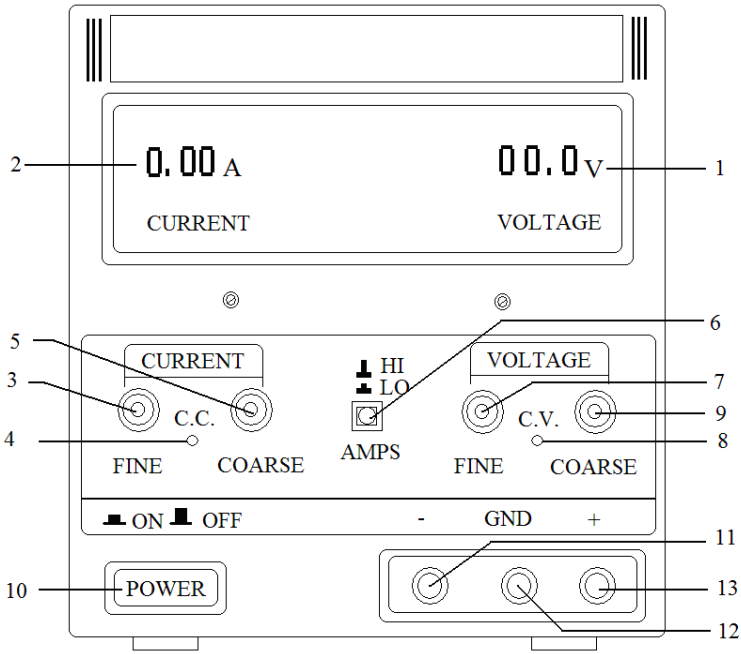
3. Panel control and Indicators

3.1 Front panel (Figure 1)

(1)Digital voltmeter：Display output voltage value

(2)Digital ammeter：Display output current value

(3) Current fine regulation knob: Finely regulate the value of output current.



(Figure 1)

(4)Current regulation indicator light: The indicator light is on when the power supply is under the condition of current regulation.

(5)Current coarse regulation knob: Coarsely regulate the value of output current.

(6)Current control knob: High or low current range selection

(7)Voltage fine regulation knob: Finely regulate the value of output voltage.

(8)Voltage regulation indicator light: The indicator light is on when the power supply is under the condition of voltage regulation.

(9)Voltage coarse regulation knob: Coarsely regulate the value of output voltage.

(10) Power supply switch

(11) “-” output terminal: Negative polarity (black)

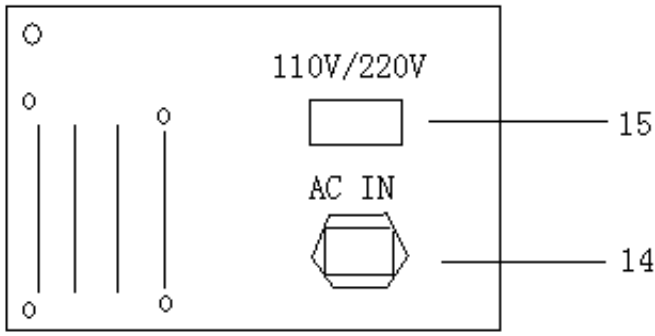
(12) “GND” terminal: Ground terminal (green)

(13) “+” output terminal: Positive polarity (red)

3.2 Back panel

(14) Power socket

(15) AC voltage selection switch



(The figure of back panel)

4. Instruction

4.1 Matters need attention

(1) AC input

AC input should be 220V ± 10% 50Hz or 110V ± 10% 60Hz (There is a switch selection in the back panel). If the input voltage is wrong, the power supply can not work normally, even it will lead to serious result.

(2) Do not use it in the condition that temperature is higher than 40^0C. Radiator of the power supply is located at the back of instrument. There should be enough space for cooling of the power supply.

(3) When open or close the power supply, voltage between output terminals should not exceed the default Value.

4.2 Current limitation setting

(1)Firstly, decide the highest save current of needed power supply instruments.

(2) Use a lead to make the “+”and “–” terminal shorted temporarily.

(3) Regulate voltage control knob until the CC indicator light is on.

(4) Regulate the current knob to the necessary current value.

(5) If the current value (the value of overload protection) is set completely, don’t regulate the current knob again.

(6) Take off the short line, now you can start your task.

4.3 Constant voltage / current features

The characteristic of the power supply is constant voltage/constant current automatic conversion. It can continuously change between constant-current and constant- voltage with the load’s change.

For example: if the load makes the power supply work under the constant voltage, as load rise, the output voltage will keep stable all the time until reach

to the value of current limitation. When reaching to the value of current limitation, output current will keep stable. And output voltage will decrease proportionally as the load increase. The conversion of constant voltage and constant current will be indicated on the front panel by LED.

Similarly, the automatic conversion from constant current to constant voltage is working as the load's decrease. In constant voltage state, the CV indicator light is on, while in constant current state, the CC indicator light is on.

4.4 Operating procedure

(1) Place the power switch in "OFF" position.

(2) Determine the correct input voltage (110V or 220V, there is a selective switch in the back panel).

(3) Plug in power

(4) Place the power switch in "ON" position

(5) Regulate "VOLTAGE" and "CURRENT" knobs to the necessary values of output voltage and current.

(6) Connect the external loading to "+" and"-" terminal.

(7) When used in places with high demand, the output post head "-" must reliably connects with post head "GND" so as to reduce output ripple voltage

5. Maintenance

1. Replacement of protective tube

If the protective tube burn out, the power will stop working. Replace it with equivalent protective tube. The crisper should not be opened unless something goes wrong.

2. Power supply voltage conversion:

The power supply is suitable for 110V/220v/50Hz/60Hz power supply voltage's using; we can use two different input voltages through changing voltage conversion switch. (In the back panel)

(1). First pluck power's plug

(2). Adjust the power conversion switch to needed voltage.

(3). Voltage conversion, the size of corresponding protective tube needs to be changed according to the requirement of back panel to install proper protective tube.

3. Regulation

The power supply is precisely regulated before it goes out; if there are errors in precision in repairing, please follow the following procedures to reregulate.

3.1 voltage regulation

1. On the output terminal of the power supply, a multimeter with the precision of±0.1% will be connected to measure DC voltage.
2. Coarsely and fine regulated the voltage to the minimum value (anticlockwise)
3. Regulate "MINVOLTS" vernier regulation, the reading of multimeter is 0
4. Coarsely and fine regulate the voltage to the maximum value (clockwise)
5. Fine regulate "MAXVOLTS" to make the reading on the multimeter voltage rating×1.05
6. Coarsely and fine regulate to make the reading of the multimeter to voltage rating.
7. Regulate the regulation resistance of the voltage meter to make the reading of the voltage rating.

3.2 Current regulation

1. Coarsely and fine regulated the current to the minimum value (anticlockwise)
2. Connect a multimeter to the output terminal of the power supply to measure current.
3. Regulate “MINVOLTS” fine regulation to make the reading of multimeter 0A
4. Coarsely and finely regulate the voltage to make it in the middle.
5. Regulate the coarse and fine current knob to make the current to the maximum value.
6. Finely regulate “MAXAMPS” to make the reading on the multimeter current rating×1.05.
7. Regulate the coarse and fine current knob to make the reading of the multimeter to the maximum current rating.
8. Regulate fine regulation knob on the front panel regulation resistance “PCB” to make the indication on the ammeter correspond with that of the multimeter.