

ATO Linear DC Power Supply

User Manual

I. Linear DC power supply overview

JK type linear DC stabilized power supply is a high-stability voltage stabilized, stable current DC stabilized power supply, with a minimum output current of 1mA and a maximum output voltage of 600V. The four-digit voltage display of the LED digital tube makes the display voltage resolution reach 10mV. Bit current display enables the display current resolution to reach 1mA. Especially in the small current range, the stability of the output current in the steady current state is extremely high, which is very suitable for the work occasions that require stable output of small DC current. The output voltage and output current are continuously adjustable within the rated value. The extremely high stability and reliability are ideal for scientific research departments, colleges and universities, enterprises and institutions that require high-stability DC power supply.

II. Specification

Model: JK30100S (0-30V/0-100A, max. output power 3000W)

III. Technical parameters

1. Rated operating conditions:

Source voltage: AC220V \pm 5%, 50Hz

Working conditions: Temperature: 0~40°C, Relative humidity: \leq 90%RH

Storage conditions: Temperature: -20~70°C Relative humidity: \leq 85%RH

2. Technical indicators:

2-1. Voltage regulation characteristics:

- The output voltage is continuously adjustable in the range of 0-30V
- Source effect: $\leq 1 \times 10^{-4} + 3\text{mV}$; ($\pm 5\%$ of rated source voltage)
- Load effect: $\leq 1 \times 10^{-4} + 3\text{mV}$; Valid value
- Ripple and noise: $\leq 30\text{mVrms}$
- Temperature drift: $\leq 300\text{ppm}/^\circ\text{C}$

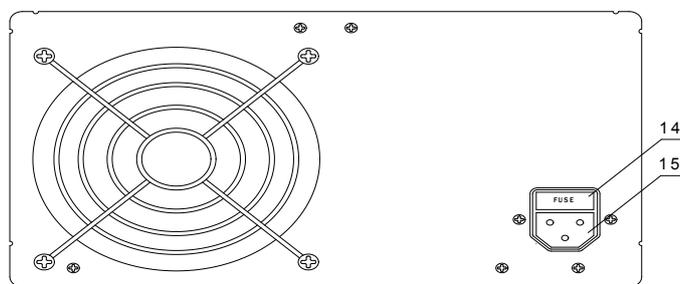
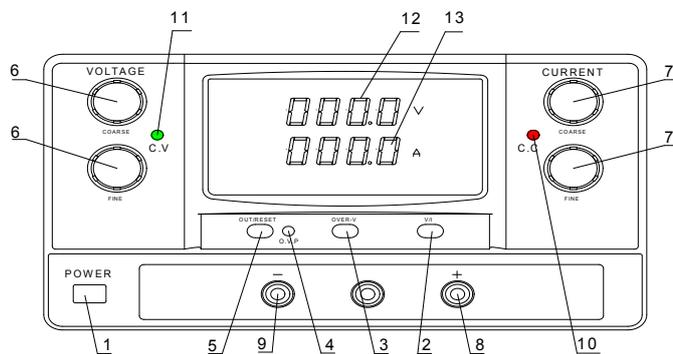
2-2. Steady flow characteristics:

- The output current is continuously adjustable in the range of **0-100A**
- Source effect: $\leq 2 \times 10^{-3} + 3\text{mA}$
- Load effect: $\leq 2 \times 10^{-3} + 3\text{mA}$
- Ripple and noise: $\leq 3\text{mArms}$

2-3. Features of digital display panel meter:

- Voltage display as 0.56" LED,
Display accuracy is $\pm (0.2\% + 2d)$,
Display voltage resolution: 100mV;
- The current display is: 3-digit 0.56" LED display in A gear,
Display accuracy: $\pm (0.4\% + 1d)$;
Display current resolution: **100mA**;

IV. Panel Features Front panel diagram and description.



1. POWER switch: I = on, O = off.
2. The voltage/current preset display button. When pressed, makes the voltmeter and ammeter display the preset voltage and current, and simultaneously rotate the voltage/current knob to adjust the preset value.
3. Overvoltage protection preset display button. When pressed, the voltmeter will display the overvoltage protection preset value. When it is necessary to adjust the overvoltage preset value, press and hold the button and adjust the trimmer potentiometer 4.
4. Adjustment hole for adjusting the overvoltage protection voltage potentiometer.
5. The output/reset multiplexing key. Changes the output state when pressed. If it was on, it will turn off, if it was off, it will turn on.
6. Coarse adjustment knob for voltage stabilization output value COARSE: turn clockwise, the output voltage increases, turn counterclockwise, the output voltage decreases. Fine adjustment knob for voltage stabilization output value FINE: turn clockwise, the output voltage increases, counterclockwise Rotate to reduce the output voltage. The fine adjustment knob FINE and the coarse adjustment knob COARSE can be used together to adjust the output voltage to the exact value required.
7. Steady-current output current value coarse adjustment knob COARSE: turn clockwise in steady-flow state, steady current increases; turn counterclockwise, steady current decreases. Steady-flow output current value fine adjustment knob FINE: turn clockwise, the current increases, rotate counterclockwise, the current decreases, the fine adjustment knob FINE and the coarse adjustment knob COARSE can be used together to adjust the constant current to the exact value required.
8. Output + extreme
9. Output - extreme
10. C. C state, when it is on, it means that the power supply is in a steady current working state.
11. C. V state, when it is on, it means that the power supply is in a stable state.
12. Voltmeter, indicating output voltage, preset voltage and overvoltage protection voltage values.
13. Ammeter, indicating output current, preset current.
14. Air switch. Fuse and spare fuse location: AC220V, 15A.

15. Source voltage input port.

V. Instructions for use and protective measures

1. The power supply voltage of the linear DC power supply should be within the rated value of 198VAC~242VAC-50Hz, and the power provided should meet the current value required when the power supply outputs the maximum power.
2. Put the POWER switch in the 0 off state, and connect the power cord attached to the power supply. The N end of the power cord plug should be connected to the live wire of the power socket as much as possible. The ground wire in the power cord should ensure a good connection with the ground.
3. The linear DC power supply is a floating type power supply. If the output terminal must be grounded, the positive (+) or (-) negative pole of the output terminal of this power supply can be connected to the ground (GND).
4. The power supply should pay attention to ventilation when using it, and keep a 10cm gap between the top, bottom, left, right and other items to ensure smooth ventilation. Do not expose the power supply to dusty, corrosive gases and other harmful substances.
5. Stable voltage output preset: put the POWER switch in the I state, at this time the POWER light and CV light are on, the stable power supply works in a stable state, adjust the VOLTAGE knob to make the output voltage reach the predetermined value, and connect the load to the output end of the power supply can work normally.
6. Steady current output preset: When no load, adjust the output voltage within the range of 2~5V, adjust the CURRENT knob counterclockwise to the "0" position, and use a wire of no less than 0.5mm² to short-circuit the + pole and - pole of the output terminal. At this time, the CC light is on, adjust the CURRENT knob to make the output current reach the predetermined value, disconnect the short-circuit wire, and connect the load to work.
7. The measurement of the technical indicators of this linear DC power supply should be carried out after 15 minutes of warm-up.

VI. Packing List

1. 1 piece whole machine
2. 1 piece user manual

VII. How to maintain the linear DC power supply?

1. When used as a voltage regulator, the output voltage is less than the predetermined value and the CC light is on, which is a current protection, and the machine automatically switches to the steady current working state. At this time, the load should be checked or the maximum current should be increased according to the usage (adjust CURRENT clockwise).
2. When used as a constant current source, the output current is less than the predetermined value and the CV light is on, which is open-circuit voltage protection, and the machine automatically switches to the stable state. At this time, check the load or increase the maximum voltage according to the usage (adjust VOLTAGE clockwise).
3. When used as a voltage regulator, if the work is unstable, and the AC power supply voltage may be lower than 198V. If the fault still cannot be solved, please contact us.