



INSTRUCTION MANUAL

ATH-1301 ADJUSTABLE DC REGULATED POWER SUPPLY



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SAFETY PRECAUTIONS

These instruments fulfill the regulations of CE-LVD (EN-61010:2001) and CE-EMC (EN-55022:1998/+A1:2000; EN 55024:1998; EN61000-3-2:2000; EN61000-3-3:1995)

To ensure safe operation of the equipment and eliminate the danger of serious injury due to short-circuit (arcing), the following safety precautions must be observed.

Damages resulting from failure to observe these safety precautions are exempt from any legal claims whatever.

- * Prior to connection of the equipment to the mains outlet, check that the available mains voltage corresponds to the voltage setting of the equipment.
- * Connect the mains plug of the equipment only to a mains outlet with earth connection.
- * Do not place the equipment on damp or wet surfaces.
- * Do not subject the equipment to direct sunlight or extreme temperatures.
- * Do not subject the equipment to extreme humidity or dampness
- * Replace a defective fuse only with a fuse of the original rating. Never short circuit fuse or fuse housing
- * Do not exceed the maximum permissible input rating.
- * Conduct measuring works only in dry clothing and in rubber shoes, i.e. on isolating mats.
- * Comply with the warning labels and other info on the equipment.
- * Do not insert metal objects into the equipment by way of the ventilation slots
- * Do not place water-filled containers on the equipment (danger of short-circuit in case of knock over of the container)
- * Do not operate the equipment near strong magnetic fields (motors, transformer etc.)
- * Do not subject the equipment to shocks or strong vibrations
- * Keep hot soldering iron or guns away from the equipment
- * Allow the equipment to stabilize at room temperature before taking up measurement (important for exact measurement)
- * Do not modify the equipment in any way
- * Do not place the equipment face-down on any table or work bench to prevent damaging the controls at the front.
- * Opening the equipment and any service and repair work must be performed by qualified service personal. Repair work should be performed in the presence of a second person trained to administer first aid, if needed.
- * Power supplies do not belong to children hands.

CLEANING THE CABINET

Prior to cleaning the cabinet, withdraw the mains plug from the power outlet. Clean only with a damp, soft cloth and a commercially available mild household cleaner. Ensure that no water gets inside the equipment to prevent possible shorts and damage to the equipment.

ATH-1301 is high-precision DC regulated power supply, with its continuously adjustable voltage output. Constant voltage and constant current are switchable automatically, and the current-limit protection point can be set arbitrarily. In the constant current state, output current is continuously adjustable.

The unit features in small size, good performance, novel appearance and etc, it is the ideal power supply unit for science investigation, college, factory, electronic appliance maintenance and etc.

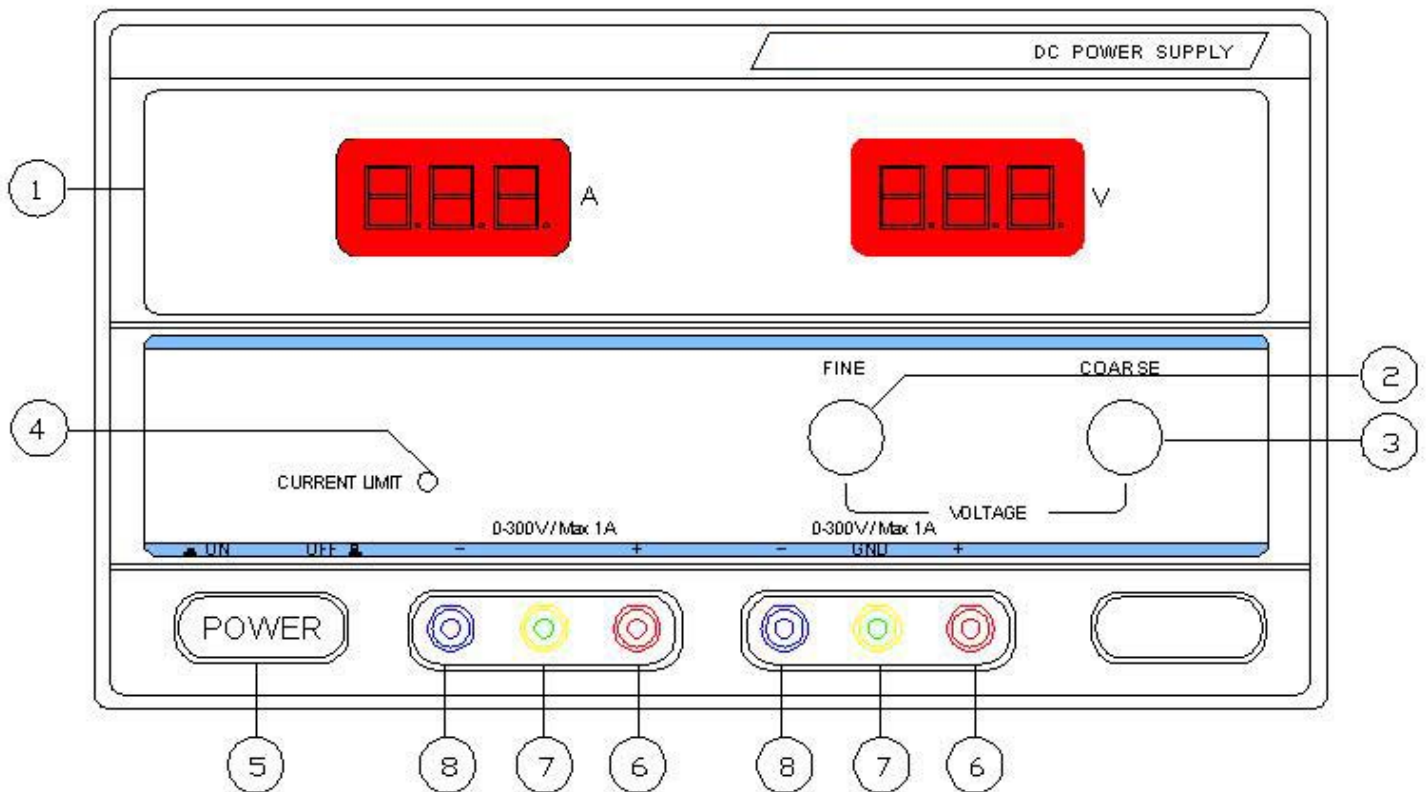
ATH-1301 has analog meter to display output voltage and current.

Model	ATH-1301
Voltage	0~300V
Current	0~1A

1. TECHNICAL DATA

- 1.1 Input voltage: 220VAC~240VAC±10%/50Hz (SWITCHABLE)
- 1.2 Output voltage: See table
- 1.3 Output current: See table
- 1.4 Line regulation: $CV \leq 2 \times 10^{-3} + 30\text{mV}$
 $CC \leq 2 \times 10^{-3} + 3\text{mA}$
- 1.5 Load regulation: $CV \leq 2 \times 10^{-3} + 0.2\text{V}$ ($I \leq 1 \text{ A}$)
 $CC \leq 2 \times 10^{-3} + 0.5 \text{ mA}$ ($I \leq 1 \text{ A}$)
- 1.6 Ripple and noise: $CV \leq 50 \text{ mV rms}$ ($I \leq 1 \text{ A}$)
 $CC \leq 1\text{mA rms}$ ($I \leq 1 \text{ A}$)
- 1.7 Protection: current-limit
- 1.8 Display accuracy:
 - a. Volt-indication: $\pm(0.5\%\text{Rdg}+2 \text{ digits})$, $\pm 2.5\%$ Full Scale
 - b. Amp-indication: $\pm(1.0\%\text{Rdg}+2 \text{ digits})$, $\pm 2.5\%$ Full Scale

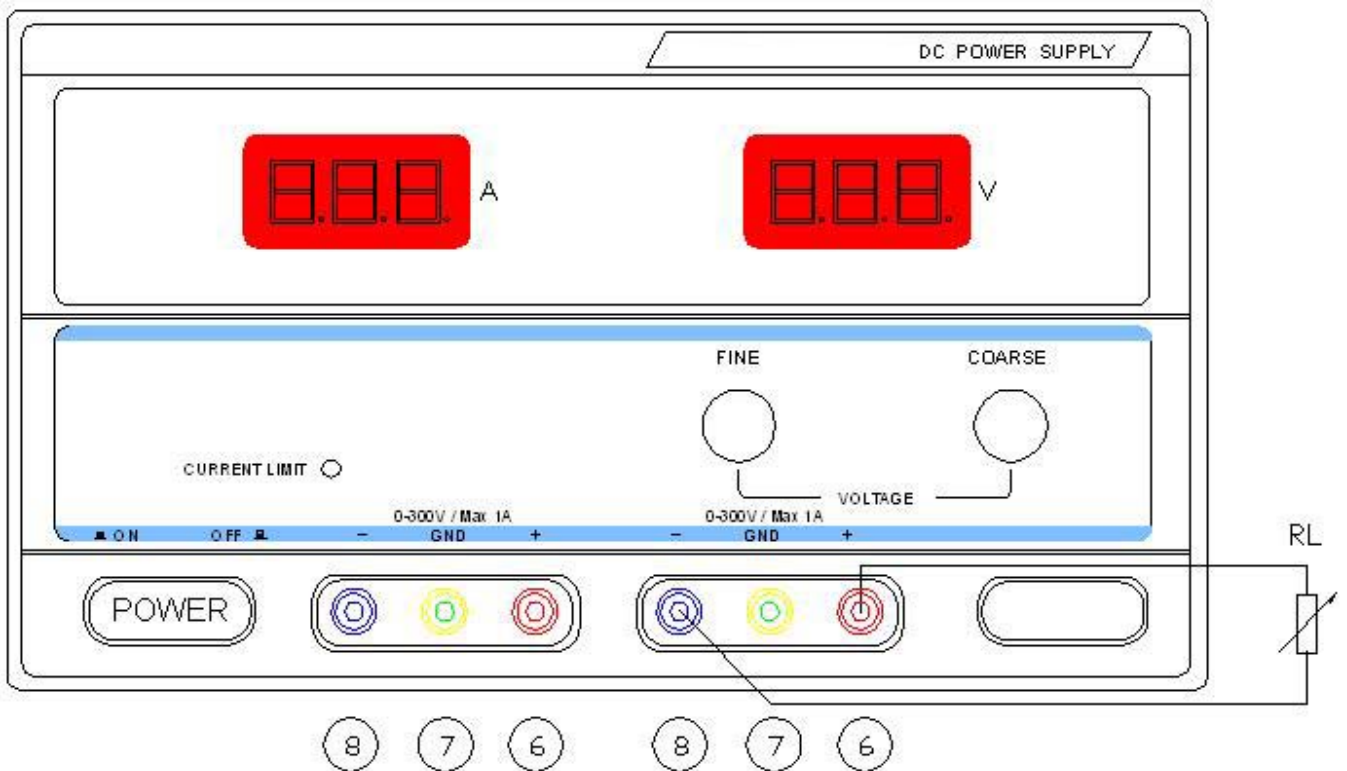
2. OPERATION



2.1 Controls and description of front-panel

- (1) Amp and Volt display: indicating output current and voltage by LED(LCD)
- (2) Voltage fine-adjustment: fine-adjusting output voltage
- (3) Voltage coarse-adjustment: coarse-adjusting output voltage
- (4) Constant-current indicator: the LED illuminates when the unit is in current-regulated state
- (5) Power switch: the unit is "ON" when this button switch is depressed, while CC LED(4) illuminating
- (6) Output terminal (+): connecting the positive terminal of load
- (7) Case ground: connect the case to ground
- (8) Output terminal (-): connecting the negative terminal of load

2.2 Load connection:



Load is connected as shown above. After the unit is switched on, output current will be indicated by LED (LCD) (1) or analog meter (2), and output voltage indicated by LED (LCD) (1) or analog meter (3). If the LED (LCD) or analog meter indicates a value over the rated, and the CC LED is on, the unit may be overload or short-circuit. You should adjust the load to have the unit working properly.

- 2.3 To use the unit as constant-current source, when power switch on, turn the adjustments (4) and (5) clockwise to the end, and the (11) anti-clockwise to the end. Then connect your load. Turn the current-adjustment (11) to get desired current.
- 2.4 As voltage regulated supply, the current- adjustment (11) must be set to their maximum values. At that time, you can set current-limit protection point arbitrarily. The setting procedure is: switch on power, connect a proper variable load and adjust its resistance to get current equal to protection point. Meanwhile, adjust current-adjustment (11) to let the CC LED in critical state. So the current-limit point is set.
- 2.5 The LED(LCD)display is in three digits (analog meter is 2.5 class). To get more accurate measuring value, you should calibrate by external circuit with precision measuring instrument.

3. CAUTIONS

- 3.1 This unit has excellent current-limit protection. If short-circuit occurs, the output current is limited. As there is controlling circuit for regulating transistor's power loss in the circuit, when short-circuit occurs, the power loss on large power transistors is not very high, it can't cause any damage to the unit. But there is still power loss when short-circuit, in order to reduce aging and energy consumption, so this situation should be found as soon as possible and turn off power, then exclude the faults.
- 3.2 When operating is finished, put it in a dry place of good ventilation, and keep it clean. If it is not in use for a long period, pull off the power supply plug for storage.
- 3.3 For maintenance, input voltage must be cut off.

4. ACCESSORIES

- 4.1 Instruction manual 1 copy
- 4.2 Fuse 2 pcs