

# 301D

## DC Regulated Voltage and Current Power Supply Operation Instruction

### 1. General Description

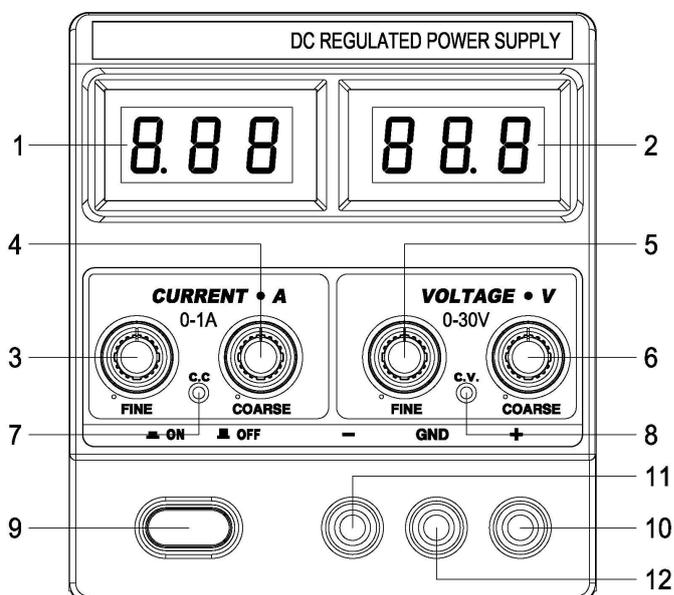
The DC power supply is high accuracy linear power supply. It is single channel constant voltage and current DC voltage stabilizers with the features of low ripple noise, high stability, and high accuracy. It have the capability of series connected and parallel connected to enhance the loading capacity of the power supply.

This is a stable voltage and current automatic transfer type of power supply with regulated uninterruptible output voltage. It has characteristic of high precision and stable. The output voltage can be adjusted from zero up to more in the range of rated voltage. Furthermore, the limited current protection also can be freely chosen. The stable output current can be adjusted in the range of below table.

This constant voltage and current DC voltage stabilizers is suitable for scientific research, laboratory, teaching, electronic product lines and communication industry as well as necessary equipments.

### 2. Basic parameter specifications and Panel features

#### 2-1 Panel feature of power supply



(1) Current indication	(2) Voltage indication
(3) Current fine tuning	(4) Current coarse tuning
(5) Voltage fine tuning	(6) Voltage coarse tuning
(7) Constant current indicator	(8) Constant voltage indicator
(9) Power switch	(10) Power output "+" terminal
(11) Power output "-" terminal	(12) Power ground "GND" terminal

#### 2-2 Nominal Operation Conditions

- Input voltage: AC 220V  $\pm$  10%, 50Hz  $\pm$  2Hz
- Output voltage: DC 0~30V
- Output current: DC 0~1A
- LED display accuracy:  
Voltage:  $\pm$  (1.0% + 1digit), Current:  $\pm$  (2.0% + 2digits)
- Protection: Current limited protection and short-circuit protection
- Operation conditions: Temperature: 0°C~40°C, Relative Humidity:  $\leq$ 90%
- Storage conditions: Temperature: -20°C~60°C, Relative Humidity:  $\leq$ 80%
- Dimension: 275(L) $\times$ 132(W) $\times$ 157(H) mm
- Working time: 8 hours continuously (temperature 20  $\pm$  5°C)

## 2-3 Constant Voltage Status

- Voltage Stability:  $\leq 0.01\% + 3\text{mV}$
- Load Stability:  $\leq 0.02\% + 3\text{mV}$
- Ripple and Noise:  $\leq 1\text{mV rms}$  (Effective Value)

## 2-4 Constant Current Status

- Current Stability:  $\leq 0.2\% + 6\text{mA}$
- Load Stability:  $\leq 0.2\% + 6\text{mA}$
- Ripple and Noise:  $\leq 10\text{mA rms}$  (Effective Value)

## 3. Direction For Use

### 3-1 Precautions

- 1) AC input: AC input should be  $220\text{V} \pm 10\%$ ,  $50\text{Hz} \pm 2\text{Hz}$ .
- 2) Isolation: There is a temperature switch in the power supply, when inside temperature is upper than  $45^\circ\text{C}$ , the fan will revolve automatically for heat abstraction. Do not use it in conditions of temperature above  $40^\circ\text{C}$ , the heat abstraction fan is on the back of the instrument, there should be enough room for heat abstraction.

### 3-2 Operating Method

1) Before turn on the instrument, "adjustable knob" (3) & (4) should be adjusted to maximum clockwise. After turning on, respectively adjust knob (5) and (6) to the required voltage. As a usual practice, first to adjust knob (6) to the approximate voltage, then adjust knob (5) to the precisely required voltage, meanwhile the light (8) is on while the light (7) is off.

2) Loading connection

The instrument is on, (1) is output current, and (2) is the output voltage. If the current shown in the display window is over the rated current and the light (7) is on, it means the output voltage is overload or short-circuit. At this time, adjust the loading to restore the instrument to normal working.

3) Using this instrument as stable current supply, after turning on the power, first should adjust the (5) & (6) to the maximum clockwise, meanwhile adjust (3) & (4) to the minimum counter-clockwise. Then connect the loading, adjust knob (3) & (4) clockwise to the required current, at this time, the light (7) is on while the light (8) is off.

4) Using this instrument as stable power supply, usually adjust the knob (3) & (4) to the maximum, in this time, can choose limited current protection point freely.

Way: turn on the power, connect the proper changeable loading and regulate the loading resistance to let output current equal to current limited protection point, then adjust the knob (3) & (4) close to light (7) on, so the current limited protection is well set up.

5) When used in places with high ripple factor, either "+" or "-" connector should be connected to GND connector tightly, so the ripple voltage would decrease.

6) Attention: Do not start the power supply with load, nor the power supply and the load would get damaged.

7) The LED meter is 3 digits, More accurate output result should be got by more precise instrument outer set.

## 4. Maintain

### 4-1 Replacing the fuse

If the fuse breaks, the power supply will stop operating, in this occasion, the cause of the break must be found out, and after correction, use a same fuse ( $2\text{A}/250\text{V}$ ,  $\Phi 5 \times 20\text{mm}$ ) to replace the broken one, the fuse box should not be open unless the problem happens.

### 4-2 Maintain

Once the power supply inside is burnt out, it must be repaired by professionals or sent to the dealer to send back to the factory for repair. Do not repair it separately to ensure safety.



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