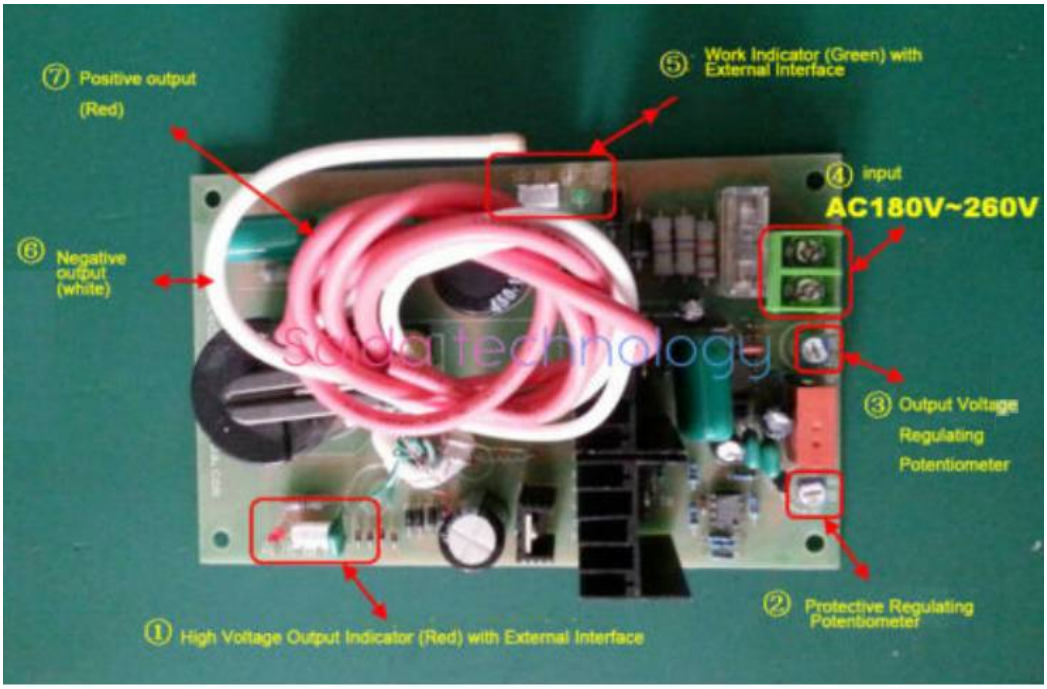
- Model: CX-150 / 170226,
- Weight: 0.6KG
- Output Voltage: ±1kV ~ ±3kV
- Output Current: 8-10mA
- Maximum Output Power: 100W



Principle and Characteristics

The high-frequency high-voltage power supply (hereinafter referred to as "the power supply") is mainly applied in gas purification equipment such as smoke, dust, and oil mist. Under the action of direct current high voltage, the high-voltage electric field of the purifier causes the air to rapidly ionize. The positive and negative ion flows can capture the pollution particles, giving them positive and negative charges respectively, and then adsorb them onto the positive and negative plates of the purifier, preventing the pollution substances from being discharged into the atmosphere, thus achieving the purpose of purifying the environment. Due to the harsh environment and usage conditions of this "power supply" being much worse than those of other ordinary power supplies. For instance, it operates in various harmful and even toxic gases.

Since the casing of this power supply is usually installed outdoors, on the roof or on the top of a building. Under the scorching sun and in close proximity to heat sources during hot summer days, the interior of the casing will reach a temperature of around 70 degrees Celsius. During hot summer days (with temperatures above 90%

or more), in winter due to ice and snow freezing, and with changes in atmospheric pressure, voltages above 10,000 volts are used in purifiers with varying concentrations of pollutants, causing significant and frequent fluctuations in the power supply load. Therefore, this "power supply" must be able to adapt to such working environments and also maintain a long service life. The dedicated "power supply" we have designed, developed and produced fully meets these requirements.

Small in size, light in weight, elegant and stylish in appearance, and compact in structure.

2. This "power supply" can operate normally even when the input power voltage fluctuates between 180V and 260V, and it is stable and reliable.

3. During use, if the load fluctuates significantly (such as when the concentration of cooking oil, carbon ash, water mist, dust, and several types of pollutants are mixed and pass through the purifier), this "power supply" can automatically adjust the output voltage and current to ensure normal operation.

4. Under the influence of the high-voltage electrostatic field, when the number of pollutants adsorbed by the electrodes reaches a certain level, manual or automated mechanical cleaning of the purifier is required. If not cleaned in time, the large number of pollutants adsorbed will cause the electrodes to experience flashover discharge or corona discharge.

This blackout phenomenon will reduce the efficiency of the purification device, and flashover discharge sparks are prone to cause fires when there are flammable substances. At the same time, this flashover arc will also pollute the power grid. In such cases, this "power source" can stop outputting power immediately upon the occurrence of a spark.

However, the output is restored within a few seconds. Once the new flashover jump is detected after the restoration, the "power supply" will continue to perform the above functions repeatedly. When the circuit is closed, it will stop working. An alarm will be triggered to prompt the purifier to be cleaned immediately. At the same time, it protects the power supply itself from being damaged due to overload, reducing the possibility of high-order harmonic pollution to the power grid and the risk of fire.

When the resistance between the electrodes reaches 0Ω (in a complete short-circuit state), the output power and input power of the "power supply" will drop to less than 1% of the normal value and the system will continue to operate. Once the short circuit is removed, the power supply will automatically restart. When the concentration of cooking fumes or water mist is too high, it can cause a temporary

short circuit of the load. After being dried by the fan, restarting the power supply will enable it to work normally again.

5. This "power supply" item has the following several protection functions

① Arc suppression protection indicator: When the load of the power supply generates an arc, this "power supply" will automatically cut off the output, but it will resume the output within a few milliseconds.

② Short-circuit protection potentiometer: When the load is short-circuited, this "power supply" will cut off the output within a few seconds. Once the short-circuit fault is resolved, it will restart and return to normal operation.

③ Voltage adjuster: If the output voltage is continuously short-circuited, causing the load to be overloaded or the connected load to be too heavy, the system will automatically reduce the output voltage and current to protect the "power supply".

II. Installation of Power Supply and Precautions

Before installing the power supply, please carefully read the instruction manual, and have it installed by a technician who holds relevant electrical installation certificates.

2. The power supply should be installed in a case that is larger than twice the size of the power supply. The case should be able to provide ventilation and protection against rain. In summer, it should be avoided to be exposed to direct sunlight. If the ambient temperature is too high, consider adding fans for cooling.

3. The high-voltage output terminal can be connected to the power supply only when it is connected to a load and sealed within a metal box with a firmly connected grounding wire. This is to prevent the risk of high-voltage electric shock. When connecting the high-voltage cable, pay attention to the markings on the power supply: red wire (high voltage), white wire (ground wire). The grounding end of the electric field should be firmly connected and together with the box to the ground, with the grounding resistance not exceeding 2Ω.

4. An insurance device and an air switch should be installed at the input end of the power supply. Then connect it to a 220VAC power source. Alternatively, an AC voltage meter and an AC current meter can be installed on the electrical control box to monitor the operation of the power supply and the cooling fan.

5. This power supply is suitable for both single-pole and double-pole purifiers.

Usage instructions:

1. Connect the high-voltage output cable to the required load; ⑦ The red wire is

the positive pole of the high-voltage output, ⑥ The black wire is the negative pole of the high-voltage output. (Please pay special attention!!! The high-voltage output terminal must be connected to the load to prevent damage to the high-voltage transformer due to excessive voltage; if there is no discharge load, then you can bring the positive and negative ends of the high-voltage output cable close to each other to about 1-3 mm to form a discharge circuit.) Although the insulation withstand voltage of our high-voltage output cable is up to 40,000V, even touching the outer insulation of the output cable with your hand will not be dangerous, but before discharging, please make sure to fix the high-voltage output cable (⑥ and ⑦) in an insulated place. It is best not to touch it directly with your hands.

2. First, turn off the protection circuit: Rotate the ② protection circuit potentiometer to the "off" position on the left.

3. Connect a 220V AC voltage to the ④ 220V power input interface (be sure to handle the wiring safely). At this point, the ⑤ power working indicator light (green) will light up; simultaneously, the ① high-voltage output indicator light (red) will also light up; at this time, the high-voltage pack will output high-voltage voltage; adjust the ③ voltage adjustment potentiometer to select the desired voltage. Since this is the protection-off state, you can see obvious high-voltage sparks at the output end. As the ③ voltage adjustment potentiometer is rotated higher, the output voltage increases, and the sparks at the output end become more obvious. If you need the power to have a pull-fire protection function; please rotate ② protection circuit potentiometer to the right (i.e., in the open direction) until the ① high-voltage output indicator light (red) flashes intermittently, then rotate it back to the left (i.e., in the closed direction) until the ① high-voltage output indicator light does not flash, and stop (when rotating the potentiometer, be sure not to rotate too fast). At this time, if a pull-fire occurs at the high-voltage output end, the protection circuit can effectively protect the power, cut off the high-voltage output, and restart after 1 second; if the pull-fire still occurs, continue the protection until no pull-fire phenomenon occurs at the output end, and exit the protection. If there are different requirements for the protection time, we can set the protection restart time according to your requirements.

4. This high-voltage board base is electrified; please pay attention to the insulation of the base and safety during use!!!!