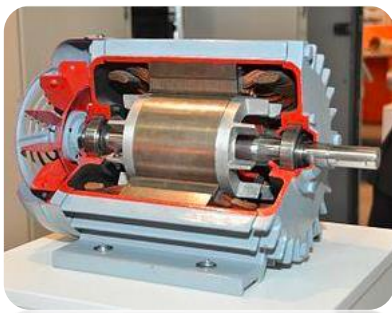


*Your power testing solution.*

ITECH

## Ideal power supply for AC motor

### - IT7800 high power programmable AC power supply



IT7800 high power programmable AC power supply

#### Background

An AC motor is an electric motor driven by an alternating current (AC). The AC motor commonly consists of two basic parts, an outside stator having coils supplied with alternating current to produce a rotating magnetic field, and an inside rotor attached to the output shaft producing a second rotating magnetic field. Compared with DC motors, AC motors are simple in structure and easy to manufacture. Their power coverage can range from a few watts to hundreds of thousands of kilowatts, or even millions. kilowatt. AC motors are widely used in industrial and agricultural production, transportation, national defense, commerce, household appliances and so on.

#### Challenges

Because the rotor is stationary, when the AC motor is started, the rotating magnetic field cuts the rotor winding at the maximum relative speed, then there is high current passing through the rotor winding, which generates magnetic energy that cancels the stator magnetic field. In order for the stator to maintain the power supply voltage, the corresponding original magnetic current will also increase (even as high as 4 to 7 times the rated current), this current is called the starting current.

The impact of the motor's starting current may cause the output voltage of the power supply to drop or trigger the overcurrent protection, resulting in failure to start. After the AC motor is started, as the motor speed increases, the stator current will quickly stabilize and then work within the rated current range. If we use a power supply with very high output current just to avoid the impact of start current, it will increase the equipment cost at the same time.

## Solutions

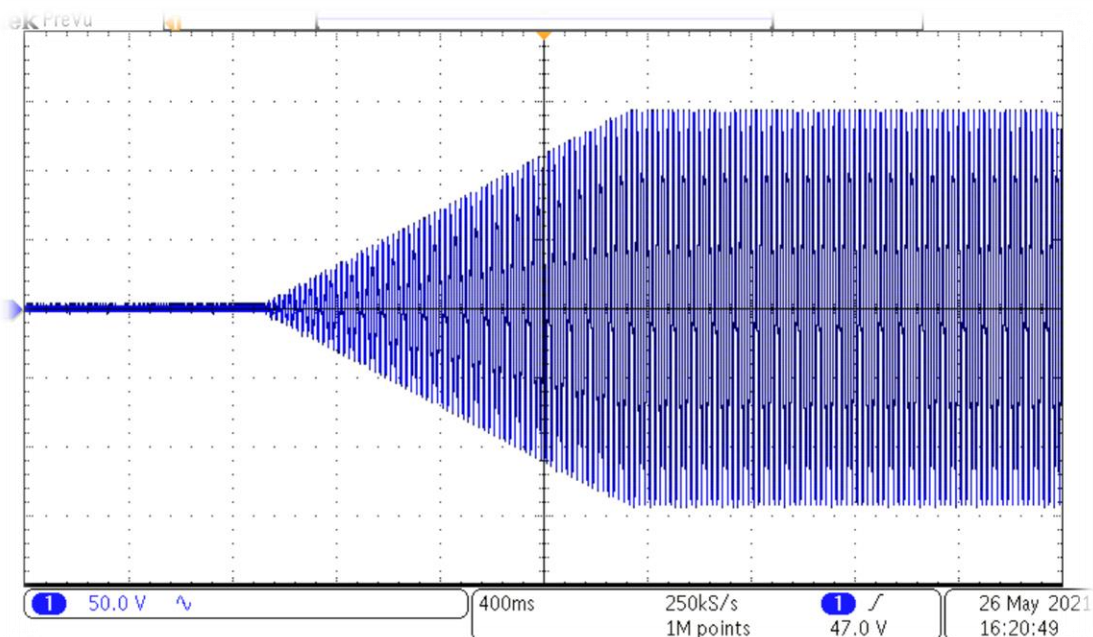
An effective method to solve the problem of the starting current is the soft start of the motor. By slowly increasing the working voltage of the motor, the speed gradually reaches the expected set value, and the starting current of the motor can be significantly reduced to ensure normal testing. To achieve this, ITECH IT7800 high power programmable AC power supply provides two solutions- adjusting the fluctuation rate of the output voltage or Sweep programming.

1. adjust the fluctuation rate of the output voltage

By changing the fluctuation rate of voltage, the input voltage at both ends of the AC motor changes linearly from low to high.



Voltage slope setting



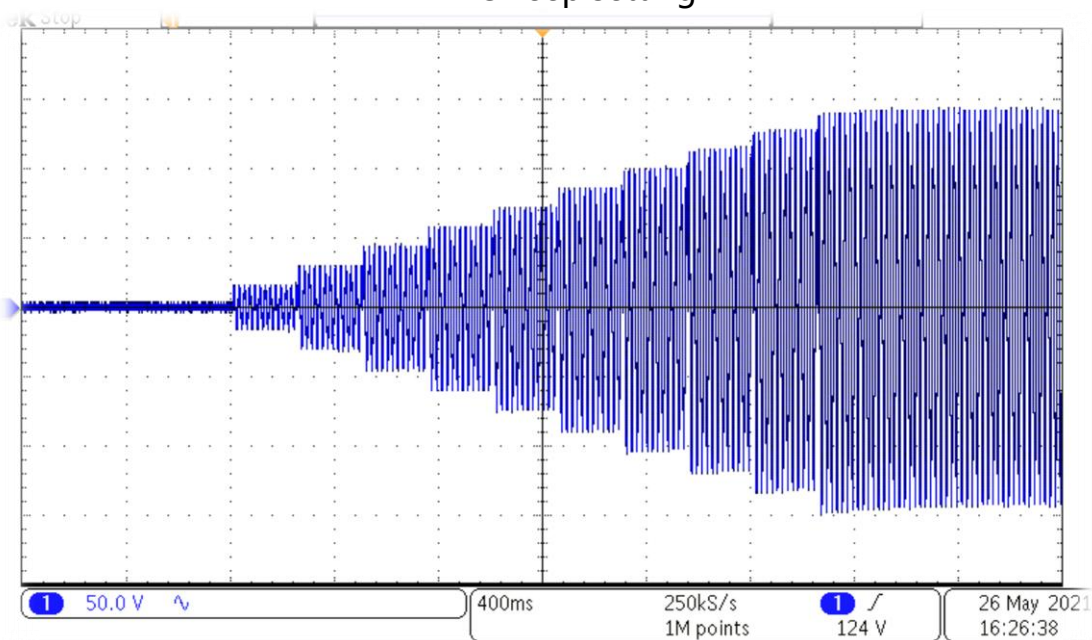
Slowly rising output voltage waveform

## 2.Sweep programming

You can set the start voltage, end voltage, step voltage, start frequency, stop frequency, step frequency and single step time, so that the voltage and frequency of the power supply can be changed in a step-by-step manner.



Sweep setting



Sweep programming- output voltage

## IT7800 high power programmable AC/DC power supply

### Highlights

- 15kVA in 3U unit, power output up to 960Kva after parallel connection
- voltage ranges up to 350V L-N and 500V L-N
- Multi-channel function, single unit can connect/test up to 3 DUTs
- Choose single phase, three-phase, reverse phase output mode, to simulate 3-phase imbalance, 3-phase harmonics imbalance, 3-phase split phase test, reverse phase sequence tests for 3-phase models and etc.
- LCD touch screen, easy to operate
- built-in power meter and arbitrary waveform generator
- well applied to the test in the fields of renewable energy, power electronics, academic research, etc.

### Related information

- [IT7800 high power programmable AC/DC power supply](#)



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