How to Use a Single-Phase Asynchronous Motor on a Frequency Converter

In equipment use, we often use single-phase asynchronous motors and frequency converters for speed regulation.

Below is a detailed explanation of how to wire a 300 series frequency converter and a single-phase motor.

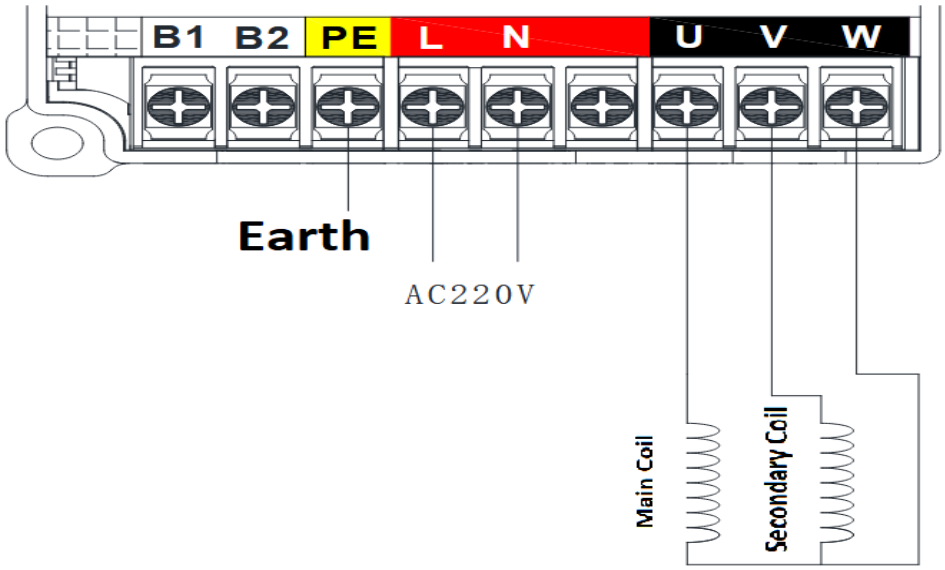
1. Stator Coils of a Single-Phase Motor

A single-phase asynchronous motor has two sets of coils: a main winding and an auxiliary winding. A capacitor connects the main and auxiliary windings to generate torque in different directions, thus starting the motor. Its structure is as follows:

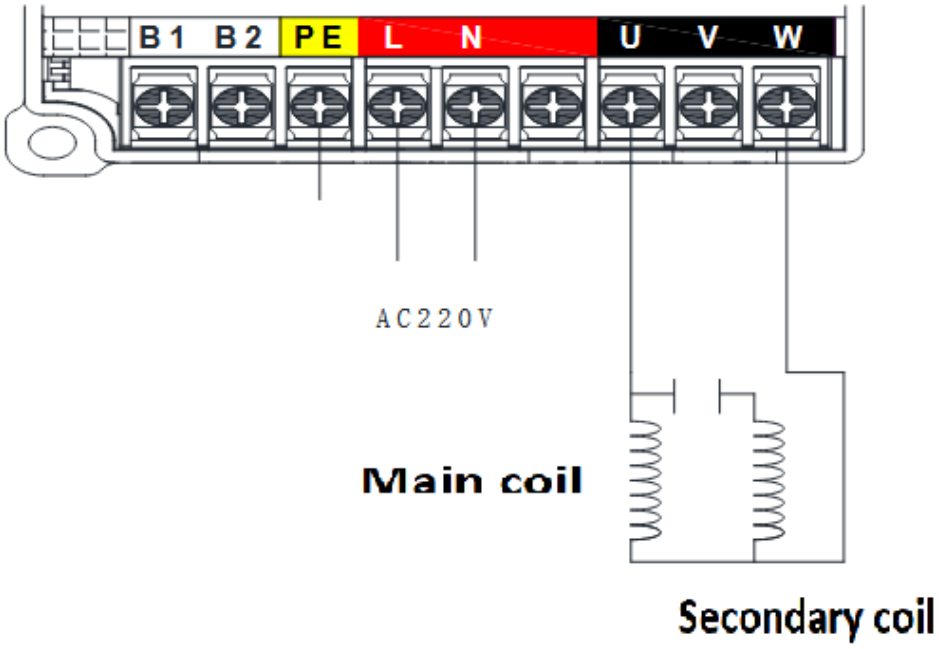
1. Single-phase frequency converters typically only accept single-phase 220V AC power.

2. If using a frequency converter, there are usually two connection methods:

A. Connecting the circuit without changing the original wiring method, as shown in the diagram below:



b.



1. The inverter power must be high enough, otherwise overcurrent faults are likely.

2. Some single-phase motors have centrifugal switches. If using the second wiring method, the centrifugal switch can be short-circuited.

3. Parameter settings:

P0-01=2

P0-10=100.00

P1-01=Motor power

P1-02=220V

P1-03=Motor rated current

P1-04=86.00 (In some cases, the current may be high, and the motor temperature rise will be high. In this case, the motor's rated frequency can be increased to reduce the output voltage) P9-12=0 P9-13=0 A5-06=160V

4. If the motor direction is reversed, the start and end terminals of the main coil or auxiliary coil need to be swapped.