

Controller design of automatic home bread machine



With the improvement of living standards, there is a growing demand for home bread machines. At present, the price of [bread machine](#) is relatively high in the market, so it is necessary to design a low-cost bread machine. In this paper, the automatic bread machine control system is designed. AT89C51 is used as [microwave drying equipment](#).

DS18B20 is used to detect the temperature. After obtaining the temperature, according to the process of making bread, the motor or heating wire is driven to work. The motor is driven by L298N, and the heating wire is controlled by relay. At the same time, it has menu selection function and real-time display production stage, temperature and time function. The controller is simple and inexpensive, and is suitable for popularization.

Traditional bread production process, the middle need to go through and noodles, fermentation, second and noodles, kneading noodles, wake up in the middle, shaping, baking and so on several processes. Each process has corresponding temperature and time requirements. Special chip L298N is used as motor drive chip. L298N is a full bridge driver chip with high voltage and high current. It has high frequency. A L298N chip has a control enabler. Using this chip as motor driver, it is easy to operate, stable and excellent in performance. This speed regulation mode has the advantages of good speed regulation characteristics, smooth adjustment, wide speed regulation range, large overload capacity, can withstand frequent load shocks, and can also achieve frequent stepless fast start, brake and reverse.

The temperature control principle of bread machine: the temperature sensor near the bread barrel.(DS18B20) The temperature value is converted to the corresponding voltage value and then transmitted to the microprocessor. The microprocessor judges and outputs the corresponding voltage value according to the program settings, so as to achieve the purpose of temperature control.

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Key input means selecting the work menu of the bread machine by pressing the button and setting the working state of the bread machine. The input buttons of bread machine include the following six kinds: "Start / stop" button; "menu" select key, "bread burn" selection key. "Time settings +" increase the key, "time setting -" to reduce the key, "bread weight" selection key.