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DESIGN TEMPERATURE AND LIQUID LEVEL CONTROL SYSTEM

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ABSTRACT

Along long to the continuance is developing of science and technologies for this level to is people's daily is lives keeping improved, so many smart devices location appear on people's daily lives, and this temperature is OK, and liquid is leveled controlled is system design for. An important is part to the design do this power oversupply, temperature sensor DS18B20 models, Ultrasonic sensors, LCD1602 model HC-SR04 models of LCD monitors, HK3FF-DC5V-SHG type of relay, heating rods, buzzer, pumps and STC89C52 model of driver ICs. Temperature and liquid very bit control is system designed achieved to feature are to many, respectively has to a contain within liquidizer for the temperature and liquid are bit for heighten achieving real-time to monitored.

1. OVERALL DESIGN

The temperature and liquid level control system design of the power part applies the three-terminal voltage regulator IC LM7805 for the system power chip. It has only three pins, output, grounding and input [1-3]. At the same time, using a three-terminal voltage regulator IC to constitute the power supply needs of the external devices is very few, and the circuit also has adjustment tubes and overheating, over-current protection circuits, which use safely and easily, and it is affordable [4]. The LM7805 application circuit diagram is shown in Figure 2.

Working current of pumps: 65MA-500MA; LCD1602 working current of LCD display: 2MA-50MA; Ultrasonic module working current: 15MA; LED working current: 10MA-20MA [5]. The working current of the analysis system with 9v voltage is less than 1000ma, so the LM7805 three-terminal voltage regulator IC meets the requirements of the design.

1.1 Ultrasonic Module

Ultrasonic module performance is very stable, and the monitoring distance is very precise, which can keep the pace with foreign production of advanced technology ultrasonic ranging module [6]. The blind area (2cm) of the module is very close and the performance is very stable at the same time, so the accuracy of the ultrasonic module of this model is very high.

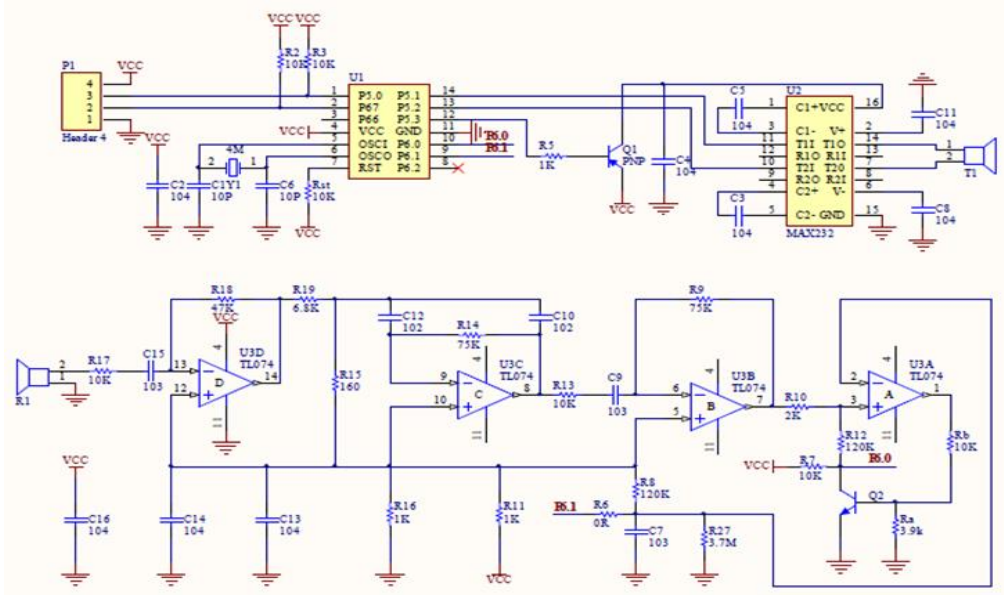


Figure 1: schematic diagram of ultrasonic module

This temperature and liquid level control system design's advantages are that the monitoring delay error and processing delay error is very small, and when the liquid level too high, too low and it has too high or too low temperature, it can process intelligently and automatically. Its various alarm values can be artificially set, which is very user-friendly and convenient.

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