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AUTOMATIC WATER CONTROLLER

Navya MS[1], Nirosha GJ[2], Mrs. Sangeetha V[3]

Department of Electronics and Communication Engineering, K.S Institute of Technology, Bangalore, India[1-2]

Assistant Professor, Department of Electronics and Communication Engineering, K.S Institute of Technology, Bangalore, India[3]

ABSTRACT: Water is very precious for the living beings and scarcity of the same is gradually increasing. Most of the cities in the country and that of the world are facing this problem. This is one of the motivations for the current work and to deploy techniques in order to save environment which in turn ensures water for the future. People generally worried about the wastage of water, when they switch ON the pump and forget to OFF them leads to overflow from the overhead tanks etc. Automatic water controller can provide a solution to this problem.

KEYWORDS: Automatic, Overflow, Scarcity, Turn ON, Turn OFF

INTRODUCTION:

The project "automatic water controller" is design to monitor the level of liquid in the tank. The system has an automatic pumping system attached to it so as to refill the tank once the water gets to the lower threshold, while offing the pump once the water gets to the higher threshold. Water is commonly used for agriculture, industry, and domestic consumption. Therefore, efficient use and water monitoring are potential constraint for home or office water management system. Moreover, the common method of level control for home appliance is simply to start the feed pump at a low level and allow it to run until a higher water level is reached in the water tank. This water level control, controls monitor and maintain the water level in the overhead tank and ensures the continuous flow of water round the clock without the stress of going to switch the pump ON or OFF thereby saving time, energy, water, and prevent the pump from overworking Besides this, water control systems are widely used for monitoring of liquid levels in reservoirs.

METHODOLOGY:

BLOCK DIAGRAM

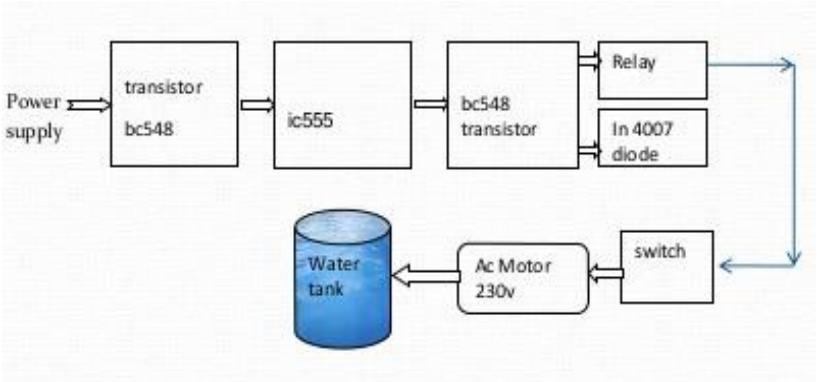

Fig. 1 Block diagram

- When the input 6V is given from Battery/power supply to the project starts working.
- The input is given from power supply then the transistor will active through the relay the power is supplied to the IC 555 timer
- The output pin of the IC timer is connected to the relay and diode
- Then the relay is maintained at a required level and the motor will be start up by switching ON
- When the motor is on its ready to fill the tank by recognizing the water level in the tank.
- It is depend up on the level of water.
- When the water is full then automatically pump gets switched OFF. Fig1(5)

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CIRCUIT DIAGRAM

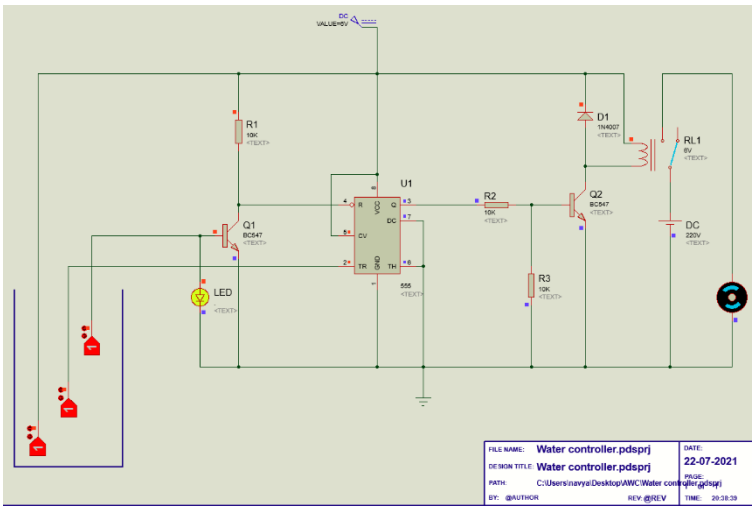

Fig. 2 Circuit Diagram

WORKING OF CIRCUIT:

The operation of project is very simple and can be easily understood.
In our project "Automatic water controller" there is three main conditions:
1. There is no water available in the water tank (Vcc).
2. Inter mediate level (Low).
3. There is ample amount of water available in tank (Up).
We know the property of 555 timer IC, i.e. its output goes HIGH when voltage at the second pin (Trigger pin) is less than 1/3 Vcc. Also we can reset back the IC by applying a LOW voltage at the 4th pin (Reset pin).
In the above circuit 3 wires are dipped in water tank. Let us define two water levels- Bottom (Low) level and Top (Up) level.

- The probe from bottom level is connected to the trigger (2nd) pin of 555 IC. So the voltage at 2nd pin is Vcc when it is covered by water.
- When water level goes down, the 2nd pin gets disconnected (untouched) from water i.e. voltage at the trigger pin becomes less than Vcc. Then the output of 555 becomes high.
- While the water level rises, the top level probe is covered by water and the transistor becomes ON. Its collector voltage goes to Vcc=0.2.
- The low voltage at the fourth pin resets the IC. So the output of 555 becomes o volt. Hence the motor will turn of automatically. Fig 2(6)

APPLICATIONS:

- Can be used in water tanks to avoid overflow.
- Automatically turn OFF/ON a pump which avoids human errors.
- Can be used in factories, commercial complexes, apartments, home etc.
- Fuel tank level gauging.
- Oil tank level controller.
- Pool water level control.

CONCLUSION:

The automatic water level controller was successfully designed and developed. The water pump is turned OFF and ON according to the water levels. Compared with other conventional designs, the automatic water controller shows excellent performance and is more effective, reliable and is not expensive.

The system is designed in such a way that it will be able to prevent the wastage of water. The whole system operates automatically and thus; does not need manual invention. It can be seen from the above points, that the design

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was able to fulfil the aim and objectives of the research and has also gone a long way in having additional features that would serve it as an excellent device compared to other conventional methods of water monitoring.

RESULT:

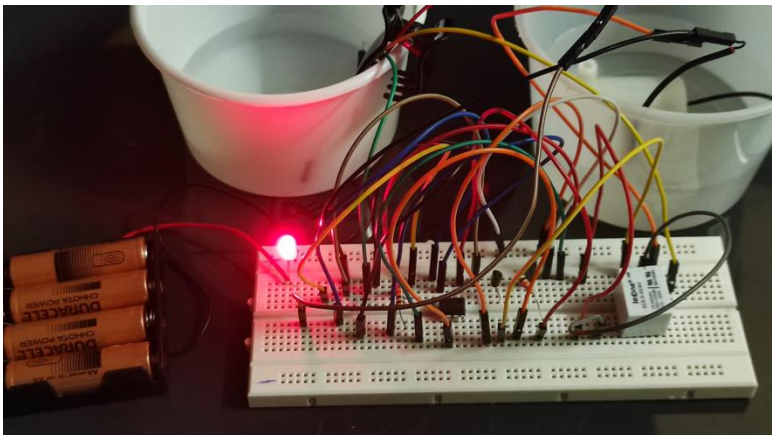

Fig. 3 Final circuit

The water pump should turn ON automatically whenever the water level drops below the low point and should automatically turn OFF when the water rises well above the fixed level. And also LED will glow indicating that the tank is filled.

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