RESEARCH ARTICLE

Water conservation by automatic water level controller

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ABSTRACT

The drinking water crises in India is reaching alarming portion. It might very soon attain the nature of global crises. Hence it is important to preserve water. In many houses there is unnecessary wastage of water due to overflow in overhead tanks. Automatic water level controller can provide a solution to this problem. The operation of water level controller works upon the fact that water conducts electricity so water can be used to open or close the circuit. As the water level rises or falls different circuits in the controller send different signals. These signals are use to switch on or switch off the motor pump as per requirement.

Keyword: drinking water crises, need of conservation, use of automatic water level controller.

INTRODUCTION

Water is required for innumerable purpose. For household sanitary purpose water required for man is about 50 to 60 lit/day. The fact is human being and other required water which is fresh and not salty and polluted. But from where this water comes is the source limited or unlimited?

Our earth seems to be unique among the other known celestial bodies. It has water which covers three forth of its surface and constitutes 60 to 70% weight of the living world. Water regenerated and is redistributed through evaporation making it seems endlessly renewable (Abu-Tleb and Muurad, 1999). Dehydration will kill us faster than starvation. Since the plant and animals we eat also depend on water. Lack of water could cause both dehydration and starvation. The scenario get worse. Water that looks drinkable can contain harmful elements, which could cause illness and death if ingested (Aitken, 1994).

In day to day household and industrial activity we are using large quantity of water. A small negligence is putting us in danger for future water need and its consequences, etc (Berk et al., 1980; Calder, 2004). 'To save the water ' for future motivated me to do the research study on "the automatic water level controller" which is not the complete solution but a attempt of saving few litres of water which will definitely contribute in fulfilling the future need of water on the earth and so to conserve this precious water we have decide to give our contribution by putting forward the idea of the automatic water level controller.

The overall description of this controller is as fallows;

An automatic water level controller is designed to switch on the pump when the water level inside the overhead tank is low and to switch off when the tank is full. The switch is mounted over the tank and the electricity is switch on/off outside the tank (Arpke and Hutzler, 2006). and we can design a device to do this job automatically by measuring the level of the tank and taking appropriate action depending on the measurement (CCWS, 2006). The controller adjusts system inputs to produce desire system output. The rate of water flowing in and out is adjusted to produce the desire output, a half full tank. Measuring the tank level and using the measurement information to change the inflow and out flow rates is called feedback. We use feedback unconsciously all the time for instance when walking we use our eyes to measure the ground of and then place our feet appropriately.

To design controller, control engineers and mathematical models of the system to be designed.

If we let A is the rate of inflow, B is the rate of out flow, and C is the tank level, we might have a model which says-

If A is greater than B, then C increases.

If A is equal to B, then C remains constant.

If A is less than B, then C decreases.

Once we have such a model mathematical tools may be used to design a controller, the development of such mathematical tools is one of the principle area of this research.

Here the main principle is "the conversion of physical quantity into easily accessible signals".

CONCLUSION

It is very useful and easy to operate and save litres of water in day. In this survey the study of domestic water conservation using automatic water level controller. I had observed the efficiency of instrument during one month we find that the instrument useful and effective in domestic water purpose. It is also useful to know the property or status of water i.e. corrosive. Which occurs due to hardness Iron or Bronze material used in sensor, it found quickly corrosive. Water level controller helpful in motor power cut off during running dry condition due to motor power cut off the pump motor. Water level controller also useful for water, electricity conservation; as well as the cost saving.

RECOMMENDATION:

The study identify that the domestic water wastage is very high in jameel colony area due to improper governor which result in waste of water. We recommended to installed automatic water level controller which is helpful in the following ways.

- Save human efforts of governors.
- Reduce the cost of electricity.
- No cost for water for maintenance.
- Increase life of water pump.
- Hassel free life in busy and hectic schedule.
- Indirectly contributing to the environment for the conservation of water and energy for future.
- Availability of water in tank 24 x 7 and 365 during power load shading in area.
- No worries or forget to fill the tank

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