iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** VIII **Month of publication:** August 2022

DOI: https://doi.org/10.22214/ijraset.2022.46493

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VIII August 2022- Available at www.ijraset.com

Two in One Electronic Energy and Water Saving Device

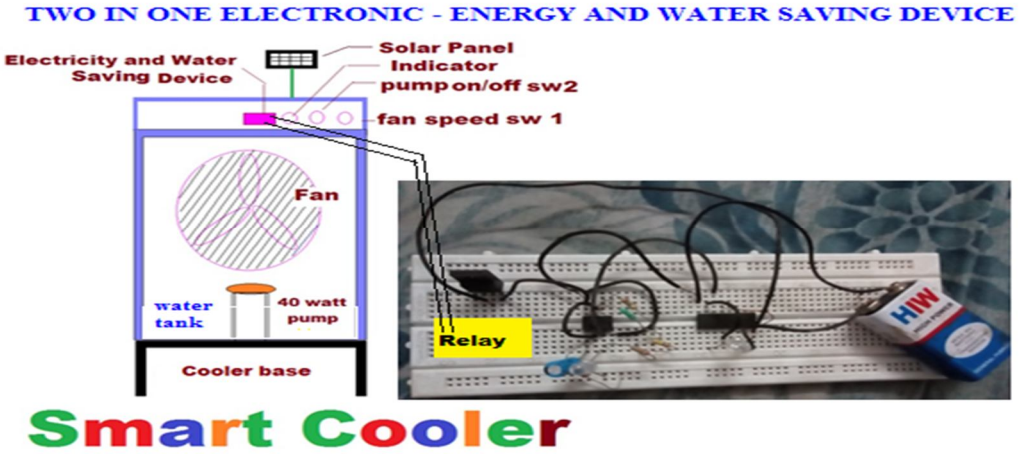
Himanish Aggarwal[1], Ms. Jaspal Kaur[2]
[1, 2]*St. Xavier School Bathinda*

Abstract: ***Friends you must be knowing that each drop of water is essential for our life. As you know that the level of water is falling down day by day. Our teacher as well as friends advised to use water according to need, to wash the car we should use less water use bucket of water instead of using shower while bathing. These days we use R.O systems in our homes instead of throwing away the waste water we must use it for watering the plants. Friends as you know that there are many type of air coolers in the market. They are cheaper than Air conditioners and gives clean air. With the help of this device our Ozone layer does not get affected. And our government also asked the citizens to use electricity carefully. To solve this problem, I have prepared this project Two in One Electronic - Energy and Water saving device.***
Keywords: Cooler, cooler pump, 555 IC and decade counter, variable resistance, capacitor, 9V power, relay.

I. INTRODUCTION

Friends now I am going to share my idea with you. When my father was cleaning the cooler this time I was looking at him and I got an idea that if the cooler motor is working all night then its pump is also working all night. If we switch off the water pump for two minute and then switch on the water pump it will not give any difference in air but save electricity and water.

Friends when I have shared this idea with my father. He said this idea is nice if everyone starts thinking like you. Then everyone will start saving the water. This will save the earth also. The way, in which I have started learning from my father, after taking training I have converted pump into control switch. It cost very low. Friends you know how it works if it is switched off two minute and switched on two minute by automatic control. Starting and shutdown is controlled by automatic timer.



II. METHODOLOGY

For making this project I have done many experiments like play toys spring after is come back to its position. I have noted its time than I have seen spring that where I can place it. Friends you know the key toys with the spring semi automatic washing machine are also used in it. I have seen that semi auto washing machine in it time is controlled by spring. Instead of spring I have putted timer integrated circuit. In resistance and capacitor with changing the value than there will be difference in frequency.

If the resistance and capacitor value less and frequency gets more and time period gets more. If the resistance and capacitor value more and frequency gets less and time period gets less. For adjusting the frequency for two minute. I have changed the value of resistance and capacitor. And after getting two minute, I have putted timer IC with Electromagnetic switch with pump controlled cooler. An astable Multivibrator can be designed by adding one variable resistor and one Electrolytic capacitor to the 555 Timer IC.

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Variable resistor and the capacitor (values) are selected appropriately so as to obtain the desired 'ON' and 'OFF' timings at the output terminal (pin3). So basically, the ON and OFF time at the output (i.e the 'HIGH' and 'LOW' state at the output terminal) is dependent on the values chosen for Resistance and capacitor. The 555 IC in the circuit is used as a clock pulse generator to provide input clock pulses to the counter IC 4017 as shown in figure.

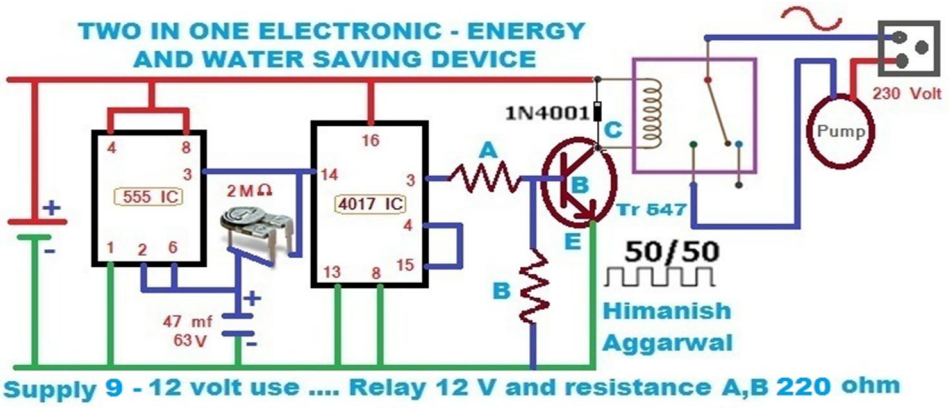


Fig. 1 Two minute on /off timer circuit

III. CALCULATIONS

During Night time calculation: If we talk about night from 10:00 PM to 6: 00 AM it is the time of using cooler. In it water pump of cooler works approximate eight hour. If we use cooler for four hours then it will be able to use it in morning and it will save electricity also. Like if we put the switch with the water pump and switch ON for two minute and switch it OFF for two minutes. With this coolers water pump will be used four hours instead of eight hours and it will increase the life of the water pump. If we talk about coolers tank approximate its capacity 50 liters. If we use cooler all the night it will empty the tank till morning. So instead of using cooler pump eight hours we should use four hours so twenty five liters water will be saved. And switching (ON/OFF) will not affect coolers pad from giving fresh air. If coolers water pump is approximate 40 watt then it consume 0.32 KWH / night in eight hours. According to 4 hours with 40 watt pump consume electricity 0.160 KWH/night.

Two minute ON/OFF pump calculations

If pump work 08 hour only (night time) according to calculations.

(40 watt Pump) x (8 hour/night) = 320 watt hour per night

=0.320kwh/night

40 watt pump power consume per night approximate =0.320kwh/night

If pump work only 04 hour (night time) according to calculations.

(40 watt Pump) x (4 hour/night) = 160 watt hour per night

=0.160kwh/night

40 watt pump power consume per night approximate =0.160kwh/night

Now you know "how we save water and electricity "friends. We also set the time according to need in this timer circuit. And we also operate cooler pump auto and manual easily. It is very low cost project and we also use it old and new cooler mounted easily. Now imagine how many coolers used in the country. And how much electricity will be saved by us with this project.

IV. FUTURE SCOPE

Pump with Timer circuit is worked by 9 Volt power is also controlled through solar panel. Dear friends it will result in saving of power all the way. Soon I will be launching it in the market regarding the domestic and Industrial Purpose.

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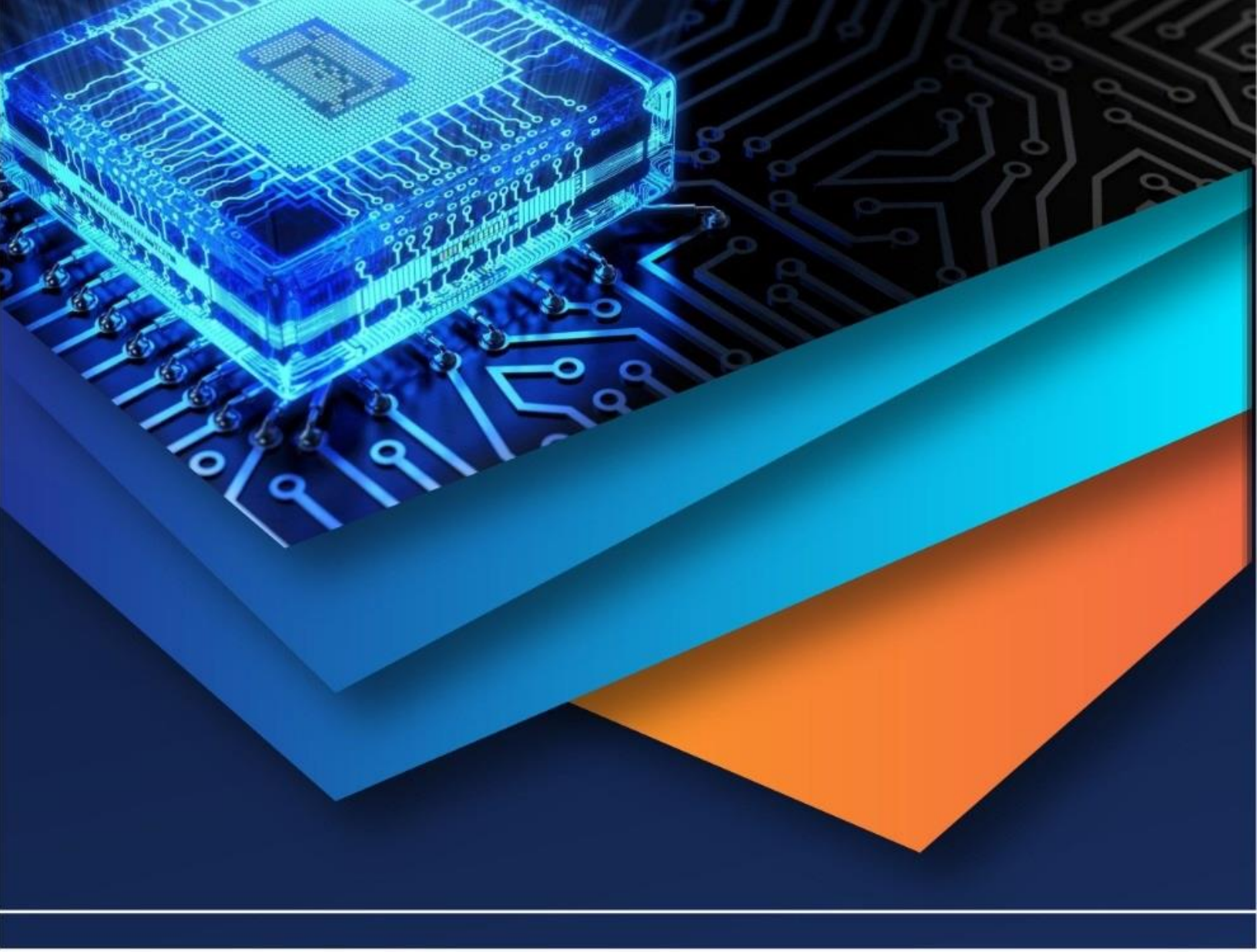
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In this work, my principal and teacher's also encourage me.

	Need of the hour innovations. Keep it up! Fr. CIDLOY FURTADO Principal
	Himanish Aggarwal is quite proficient in all science concepts. All the best for this top notch science experiment stay blessed. Archana Rajput Coordinator
	Budding scientist, a brilliant idea wishing Himanish Aggarwal best of luck. May he get success on this path of innovation. Ms. Jaspal Kaur Sidhu HOD Science
	Proud of you Himanish keep up the spirit. hope to receive more constructive ideas in future. God bless you. with love Ms. Rajdeep Sidhu Class teacher
	You have paved the way for others too keep the spirit up. Ms. Neha Narang TGT English
	An enthusiastic mind, so far I remember him since grade 4, has always come up with his creative and well implemented energy efficient ideas, not only surprised us but also motivated his fellow mates. Wishing you the best in all your future endeavors.....God bless you. Mrs. Jyoti Wadhwa M. Phil. Computer Science



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