International Journal of Scientific Research and Engineering Development-– Volume X Issue X, Year

Available at www.ijsred.com

RESEARCH ARTICLE OPEN ACCESS

Automatic Sanitizer Dispenser

Makarand Madhukar Jadhav, Suraj Sandip Patil, Gaurav Rajendra Jadhav, Aditya Ravindra Kumar Janjale , Prof. Tathe S.G.

Diploma student in Electrical Engineering department Mahatma Gandhi Mission Polytechnic College - [MGM's Polytechnic] Aurangabad, affiliated with MSBTE. Maharashtra, India
Mj9168818134@gmail.com

Diploma student in Electrical Engineering department Mahatma Gandhi Mission Polytechnic College - [MGM's Polytechnic] Aurangabad, affiliated with MSBTE. Maharashtra, India
Surajsandippatil@gmail.com

Diploma student in Electrical Engineering department Mahatma Gandhi Mission Polytechnic College - [MGM's Polytechnic] Aurangabad, affiliated with MSBTE. Maharashtra, India
Jgaurav015@gmail.com

Diploma student in Electrical Engineering department Mahatma Gandhi Mission Polytechnic College - [MGM's Polytechnic] Aurangabad, affiliated with MSBTE. Maharashtra, India
Adityajanjale785@gmail.com

Professor in Electrical Engineering department Mahatma Gandhi Mission Polytechnic College - [MGM's Polytechnic] Aurangabad, affiliated with MSBTE. Maharashtra, India
Tatheswapnil00@gmail.com

----------**********----------

Abstract:

This is result paper on automatic sanitizer dispenser. Sanitizing our hands is very important to reduce effect of spreading COVID-19. As touch the sanitizer dispenser day to day regularly is not safe, there is a need for Automatic Sanitizer dispenser. Automatic Sanitizer Dispenser is a touch-less programmed sanitizer which is completely non-contact dispenser which have ultrasonic sensor in it which detect the hand of person who want to sanitize their hand, they put it under the sanitizer dispenser and automatically the sanitizer gets fall in users hand. How much time the person put their hand under the dispenser the sanitizer continuous to fall until the person remove their hand. Hence we can use this automatic sanitizer dispensers at many different places like hospitals, Airports, shopping centers and industries, etc.

Keywords — **COVID-19, Automatic Sanitizer Dispenser.**

----------**********----------

I. INTRODUCTION

Demand of the hand sanitizers and dispensers are increasing day by day as the corona virus is spreading rapidly around world. Alcohol based hand sanitizers are usually come in normal bottles or pump dispensers. In case of this dispenser the sanitizer can applied on the hand by pressing the pump or in case of bottles by squirting it. in this type of cases there is risk or chance of coming people in the contact with each other and spread the virus. This virus is spread through one body to another body from specific distance. In current situation as per the information from world health

organization, in current situation we have to keep our hands sanitize time to time regularly because it is necessary. The social distancing is also very important hence the physical touch to the sanitizer container is not good as per the situation.

Therefore by using ultrasonic sensor movement, automatic hand sanitizer are gives better solution for hygienic hand cleanliness as possible. An automatic hand sanitizer machine can be install in any area and effortlessly moved when it required

II. LITERATURE SURVEY

R. Monina Klevens, et al., used a multi-step approach and three data sources. The main source of data was the National Nosocomial Infections Surveillance (NNIS) system, data from 1990–2002, conducted by the Centers for Disease Control and Prevention. Information from the National Hospital Discharge Survey (for 2002) and the American Hospital Association.

Rakshith L, Department of Electronics and Telecommunication Engineering, SSIT, SSAHE, Tumkur-572105. This project focus on the proximity sensor based automatic sanitizer dispenser which reduce the human contact. The best application of this type of dispensers are used at public places where the social distancing and hygiene is important.

Dr. K B Shiva Kumar, Department of Electronics and Telecommunication Engineering, SSIT, SSAHE, Tumkur- 572105. This project focus on the proximity sensor based automatic sanitizer dispenser which reduce the human contact. The best application of this type of dispensers are used at public places where the social distancing and hygiene is important.

Akshay Sharma A S Student, Department of Electronics and Communication Engineering, Vidyavardhaka College of Engineering Mysore, India. The alcohol based hand sanitizers are more effective than soaps, and also easy to use. The paper also says that non contact dispensing is again important to prevent pathogen spreading and finally, hand hygiene is most important and must be part of our daily life.

III. PROPOSED BLOCK DIAGRAM

In the operation of automatic sanitizer dispenser we use IR proximity sensor which detects the physical substance like our hand then it turn the OUT pin LOW. When the OUT pin goes LOW the PNP transistor become turn ON and pump also start with this. 1K resistor is connected between the base of transistor and OUT of sensor, which protect the transistor from burning out.

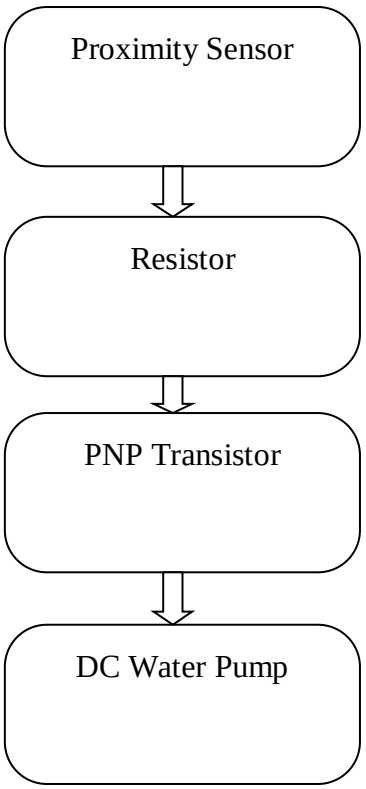

Fig: 1 Block diagram of main components

IV. PROPOSED SYSTEM DEVELOPMENT

Proximity Sensor:

The proximity Sensor is a Sensor that can able to detect the presence of the nearby objects without any Physical contact. There are two type sensor.

1)Inductive proximity sensor

2)Capacitive proximity Sensor

- Inductive proximity Sensor can only detect Metal target this is because sensor utilized an Electromagnetic field the Inductive characteristic of metal change the field properties they can detected either a greater or shorter distance.

- Capacitive proximity Sensor this proximity Sensor are capable of detecting any thing that can carry any electrical charge Capacitive sensor are commonly used in liquid levels detection

Resistor:

A resistor is it Electronic component and it consist two terminal one for input and another one for output. In electronic circuit Resistor are used to reduce current flow and adjust singal level. high Power Resistor that can dissipate many watt of electrical Power as heat may be used as your Part of Motor control in Power distribution system. Variable resistor can be used to adjust circuit element or as sensing devices.

TIP32 C PNP Transistor:

TIP32 C PNP is a three layer device it has high collector current of about 2A transistor are designed as to indicate increasing collector-base and collector- emitter breakdown voltage rating.

Specification

1) Medium power PNP transistor

2) DC current gain 10 to 50

3) Continuous emitter current is 3A

4) Collector emitter voltage is 100V

5) Emitter base voltage is 100V

6) Emitter base voltage is 5V.

USB:

USB stand for universal Serial Bus. USB was introduce in 1997 the technology didn't really take of until introduction of Apple IMac which USB port exclusively. USB is most common type of Port used in today computer. It can use to connect keyboard, mice, game controllers, printers, scanner, etc. You can connect upto 127 peripheral to Single USB port. USB has 1.1 specification support data transfer rate upto 12mbps and USB 2.0 has maximum transfer rate of 480 mbps.

Mini submersible water pump:

The DC 3-6 mini submersible water pump is low cost and compact in size. Submersible pump motor which can be operated from a 2.5~ 6V power supply. The main operation mechanism of radial mix flow pump in the HSP (horse power). The motor is a hydraulic motor rather than electric motor and may be close cycle or open cycle. It can take up to 120 liter's per hour with a very low current consumption.

V. PROPOSED ALGORITHM

The proposed algorithm is as shown in the Fig:2 below.

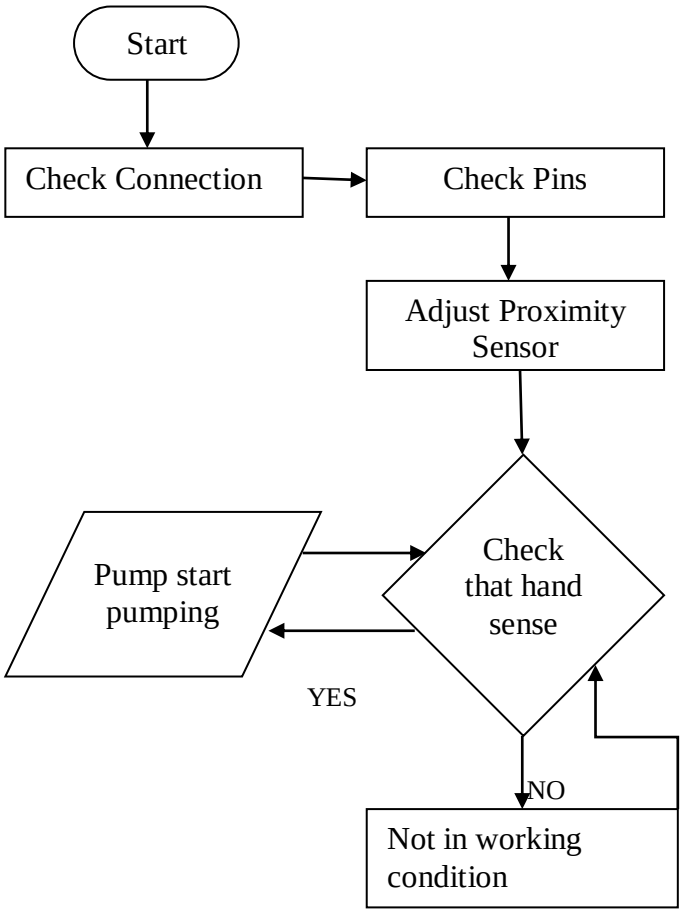

Fig: 2 Flow Chart for proposed method

VI. RESULT AND DISCUSSION

If you place your hand in front of sanitizer dispenser the machine dispenses the definite proportion of sanitizer and automatically gets ready for the next pump within 2-5 sec.

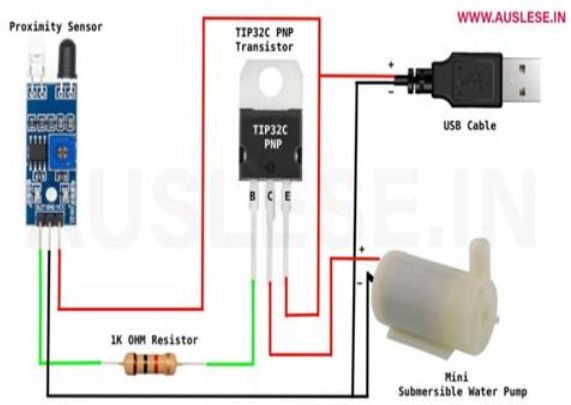

Fig.3 Actual circuit diagram

VII. CONCLUSION

The main aim of our project is to make contact less sanitizer dispenser, as in order to keep everyone safe one should avoid contact. The machine is also too cheep and easily mountable over walls in most of the public places with its very easy refilling process.

Also the sanitizes being used must be alcohol based and it is more preferable rather than hand wash or soaps because it don't need any water to flush the foam created simply pour on hand and rub.

Because of this non-contact machine one can prevent germs from getting over hands as hands are essential part and maximum spreading of germs takes place due to hand contact. Also in today's

situation of COVID-19 the products like this are really very helpful to prevent spreading of germs and bacteria.

REFERENCES

[1] Rakshith L, Department of Electronics and Telecommunication Engineering, SSIT, SSAHE, Tumkur-572105.

[2] Dr. K B Shiva Kumar, Department of Electronics and Telecommunication Engineering, SSIT, SSAHE, Tumkur-572105.

[3] Akshay Sharma A S Student, Department of Electronics and Communication Engineering, Vidyavardhaka College of Engineering Mysore, India.

[4] Guide to implementation of the WHO multimodal hand hygiene improvement strategy. Available from: http://www.who.int/patientsafety/en/ , accessed on August 24, 2010.

[5] WHO Guidelines on Hand Hygiene in Health Care. First Global Patient Safety Challenge. Clean Care is Safer Care. Availablefrom:http://www.who.int/patientsafety/en/ , accessed on August 24, 2010.

[6] D. Pittlet, WHO Guidelines on Hand Hygiene in Helath Care: a Summary. World Health Organization Patient Safety:University of Geneva Hospitals (2009).

[7] Jessica Hillburn MT(ASCP),CIC, Brian S Hammond, Elanor J Fendler PhD, Patricia A Groziak MS, "Use of alcohol hand sanitizer as an infection control strategy in acute care facility", American Journal of infection control Volume 31,Issue 2, April 2003.

