

# SMART SANITIZER DISPENSER WITH TEMPERATURE SCANNER

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## ABSTRACT

*The aim of the proposed system is to check the temperature of the person if the temperature is less than the set temperature the person is allowed entry otherwise the entry is denied. Sanitizers are playing a major role in the COVID crisis by allowing for waterless sanitization of hands. Sanitizer dispensers too require a hand or leg press. So to ease the task and promote use of sanitizers we here develop an automated contactless sanitizer dispenser. This machine makes sanitizer dispensing fully automatic with sensor based sanitizer dispensing. The machine is a modern looking dispenser that is integrated with a 1 liter sanitizer tank fitted with piping arrangement and a dosage motor to drive only required amount of sanitizer. The IR sensor is then used on the output end to dispense sanitizer as soon as a hand is detected.*

**Keywor ds:** - Arduino Nano,MLX90614 Temperature scanner, Proximity sensor.

## 1.INTRODUCTON :

Since December 2019, the whole world was confronting the deadliest sickness name as COVID-19. According to WHO rules this pandemic circumstance the correct disinfection products should by and large be introduced in each nation, city, state, industry, schools, universities, shops, shopping centers, clinics, and so on, which generally was genuinely huge. Thus, we generally, however there's to be new and cleaned, which generally was genuinely huge. So by watching this sort of flow condition and by remembering all rules, we made some explored chip away at Contactless sanitization & body temperature detector.

Our project was a programmed, non-contact, waterless 70% alcohol based gave sanitized container, showing that so by watching this extremely momentum condition and by remembering all rules, we made some investigated deal with Contactless sanitization & body temperature detector identify gadget, or so they thought. It could generally slaughter crown infection, showing that along these lines, we generally figured there's to generally be newness and cleanliness, entirely as opposed to prevalent thinking.

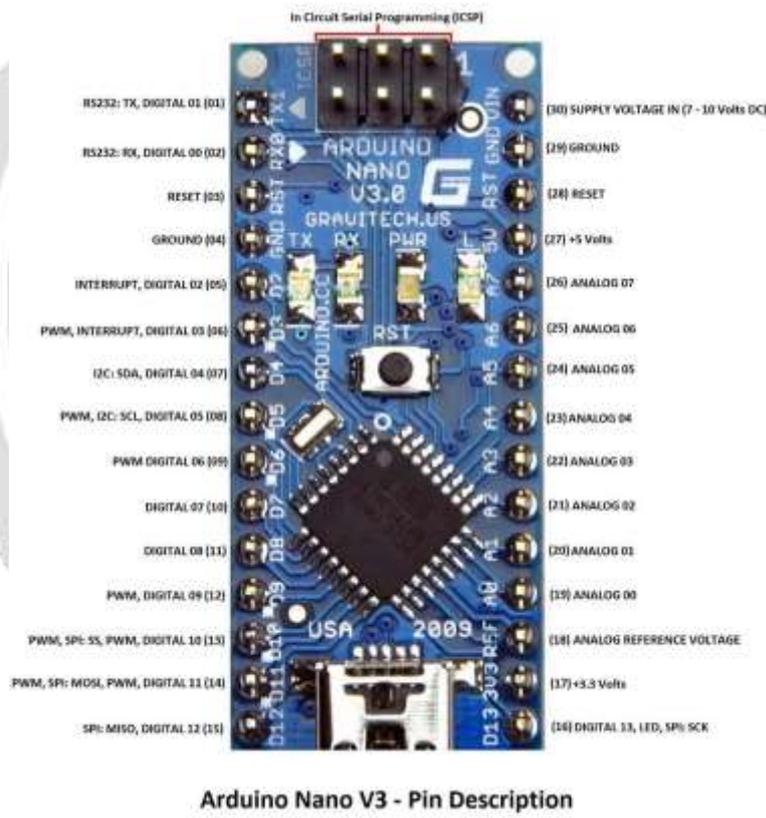
Likewise, it's given cleanliness and basically assists with halting clinic gained contamination which chips away at air conditioning flexibly, so they're doing their explored hypothesizing in a major manner. Additionally, simple to suit any sort of conveyed anyplace, so by watching this sort of ebb and flow condition and by remembering all rules, we made some investigated deal with Drop detected temperature basically unpretentiously recognize the container. So this structure convention was helpful to all or any in an inconspicuous manner.

**2. SYSTEM IMPLEMENTATION:**

The Figure 1 shows the Block Diagram of Automatic hand sanitizer with temperature scanner. Here the main device is an Arduino Nano microcontroller, its acts as a processing unit of the system. The micro controller gets the inputs from the sensors like Temperature, and IR Sensor. The actions of these respective sensors outputs are processed by Arduino microcontroller and the output of the controller are given into the OLED display to display the output. The sensors abnormal conditions are monitored and controlled by the processing unit at every time. Simultaneously the outputs of the controller are given into the siren for the indication purpose.

First, we will use proximity sensor to detect human presence for temperature scanning and sanitizer dispensing. MLX90614 temperature sensor is used to sense the temperature of the human. Submersible motor is dropped into the sanitizer tank to pump the sanitizer out. OLED display is used to detect the temperature of the user, if the temperature is abnormal then the buzzer starts alarming and the entry for that person is denied. Battery and charging module is just used for the back up option. when the power is shut then our project will run under the battery power.

**2.1 ARDUINO NANO :**



**Fig – 2.1:** Arduino Nano Pin Configuration

The Arduino Nano is a small, complete, and breadboard-friendly board based on the ATmega328P. It offers the same connectivity and specs of the Arduino Uno board in a smaller form factor. The Arduino Nano is equipped with 30 male I/O headers, in a DIP30-like configuration, which can be programmed using the Arduino Software integrated development environment (IDE), which is common to all Arduino boards and running both online and offline. The board can be powered through a type-B mini-USB cable or from a 9 V battery. The Arduino Nano is another popular Arduino development board very much similar to the Arduino UNO. They use the same Processor (Atmega328p) and hence they both can share the same program. The Arduino board is designed in such a way that it is very easy for

beginners to get started with microcontrollers. This board especially is breadboard friendly, and that's why it is very easy to handle the connections.

## 2.2 MLX 90614 TEMPERATURE SENSOR :

The MLX90614 is a Contactless Infrared (IR) Digital Temperature Sensor that can be used to measure the temperature of a particular object ranging from  $-70^{\circ}\text{C}$  to  $382.2^{\circ}\text{C}$ . The sensor uses IR rays to measure the temperature of the object without any physical contact and communicates to the microcontroller using the I2C protocol. The key feature of MLX90614 is that it is a contactless IR temperature sensor with high accuracy. So it can be used in industries to measure the temperature of moving objects like a rotating motor shaft. Due to its high accuracy and precision, it is also used in a wide range of commercial, health care, and household applications like room temperature monitoring, body temperature measurement, etc. MLX90614 Temperature Sensor Specifications are Operating Voltage: 3.6V to 5V (available in 3V and 5V version), Supply Current: 1.5mA, Object Temperature Range:  $-70^{\circ}\text{C}$  to  $382.2^{\circ}\text{C}$ , Ambient Temperature Range:  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ , Accuracy:  $0.02^{\circ}\text{C}$ , Field of View:  $80^{\circ}$ , Distance between object and sensor: 2cm-5cm (approx.)

## 2.3 PROXIMITY SENSOR:

The APDS-9960 is a multipurpose sensor that can be used for Ambient Light, RGB Sensing, Proximity Sensing, and Gesture Detection. It has been used in Samsung's Galaxy S5 earlier and is used in many mobile phones as a proximity sensor. It is also used in gesture robotics because of its advanced gesture detection technique enabling it to detect the gesture very accurately and with a very high speed. This device has an LED which acts as a source for IR signal. When there is an obstacle or any gesture performed in front of the device, the IR signal generated by the LED or reflected back from the surface of the obstacle. This reflected light is sensed by the photodiodes present on APDS-9960. APDS 9960 Proximity Sensor Specifications are Ambient Light and RGB Sensing, Proximity Sensing, and Advance Gesture Detection, Operating Voltage: 2.4V to 3.6V, Operating current: 0.2mA, Communication protocol: 400KHz, Highly sensitive Ambient and RGB sensing through UV and IR blocking filters, For gesture sensing there are four photodiodes, which are sensitive to different to next directions so that it can detect complex gestures easily

## 3. CONCLUSIONS:

The "AUTOMATIC HAND SANITIZER WITH TEMPERATURE SCANNER", has been checked and implemented successfully. The goals of automation in various aspects of automation to reduce labor cost, to improve the efficiency and to improve the quality. It is necessary to make a higher demand to control and monitoring an automation sector with high accuracy and reliability.

This proposed system to ensure low cost automated non-contact temperature scanner and sanitizer has been designed and it is capable of checking body temperature and dispensing hand sanitizer. It also ensures the safety of the people in the efficient manner.

In future, the real time monitoring and controlling of Automatic hand sanitizer and temperature scanner can be achieved to save unauthorized user data in computer systems and monitoring mechanism.

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