ABSTRAK

Pandemi COVID-19 telah memunculkan tantangan baru untuk diatasi oleh Bangsa Indonesia. Adapun suhu tubuh normal manusia antara 36,5 - 37,5° C bila melebihi suhu tubuh normal manusia maka orang tersebut terindikasi Covid 19.

. Dalam menekan angka penyebaran, pemerintahan Indonesia menerapkan protokol kesehatan dengan pengecekan suhu tubuh menggunakan *thermo gun*. Tetapi penggunaan *thermo gun* masih secara manual (bantuan manusia). Sehingga penulis mengangkat judul "Rancang Bangun *Thermo Detector* Semi Otomatis Menggunakan Mikrokontroler Arduino Nano".

Dalam Perancangan dan pembuatan alat *Thermo Detector* Semi Otomatis. Pertama, perancangan perangkat keras (*hardware*) menggunakan komponen antara lain mikrokontroler Arduino Nano, sensor MLX90614, Sensor Infrared, *buzzer*, Motor DC, Motor Servo dan *driver* motor L298N. Kedua, perancangan perangkat lunak (*software*) berupa program file pada softwere Arduino IDE.

Hasil pengujian yang telah dilakukan penelitian ini, Sensor Infrared dapat bekerja dengan optimal jika output bernilai 1 (*HIGH*) maka sensor mendeteksi *user* dan jika output bernilai 0 (*LOW*) maka sensor tidak mendeteksi *user*. Sensor MLX90614 dibandingkan dengan termometer *infrared* pabrikan BEURER tipe FT 85 mendapatkan rata-rata selisih yang diuji sebanyak 10 kali terhadap jarak yaitu : : pada jarak 1 cm nilai selisih 2,06 ◦C, pada jarak 2 cm nilai selisih 2,45 ◦C, pada jarak 3 cm nilai selisih 2,49 ◦C dan pada jarak 4 cm nilai selsisih 2,77 ◦C. Dan terdapat eror pada hasil pengujian suhu terhadap jarak sebesar 6,17 % sampai 8,43 %.

Kata Kunci : Covid 19, Thermo Detector Semi Otomatis, Mikrokontroler

ABSTRACT

The COVID-19 pandemic has created new challenges for the Indonesian people to overcome. The normal human body temperature is between 36.5 - 37.5° C, if it exceeds the normal human body temperature, that person is indicated as Covid 19. In suppressing the spread rate, the Indonesian government implements a health protocol by checking body temperature using a thermo gun. But the use of the thermo gun is still manual (human assistance). So the author raised the title "Design Automatic Thermo Detector Using Arduino Nano Microcontroller".

In the Design and manufacture of Automatic Thermo Detector tools. First, the hardware design uses components including Arduino Nano microcontroller, MLX90614 sensor, Infrared Sensor, buzzer, DC Motor, Servo Motor and L298N motor driver. Second, software design in the form of program files on the Arduino IDE software.

The results of the tests that have been carried out in this study, the Infrared Sensor can work optimally if the output is 1 (HIGH) then the sensor detects the user and if the output is 0 (LOW) then the sensor does not detect the user. The MLX90614 sensor is compared with the infrared thermometer manufacturer BEURER FT 85 type to get an average difference that is tested 10 times against the distance, namely: at a distance of 1 cm the difference value is 2.06 C, at a distance of 2 cm the difference value is 2.45 C, at a distance of 3 cm the difference value is 2.49 C and at a distance of 4 cm the difference value is 2.77 C. And there is an error in the results of the temperature test against the distance of 6.17% to 8.43%.

Keywords: Covid 19, Automatic Thermo Detector, Microcontroller