

PROTOTYPE AUTOMATIC FAN SMOKE CONTROL TOOL BASED ON SMOKE SENSITIVITY

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Abstract

Air pollution is a form of environmental pollution that can disrupt the human respiratory system. The air has now been contaminated by pollutant gases such as smoke. Smoke in a room will cause respiratory distress to the person who inhales it, To solve the problem in this final task the author designed and made prototype automatic fan exhaust based on smoke sensitivity, the prototype room used measured 40 cm x 40 cm x 30 cm.

The MQ-2 sensor is a component that can detect gases derived from flammable materials in the air that produce an output in the form of analog voltage. MQ-2 sensors are sensitive to LPG, Propane, Hydrogen, Carbon Monoxide, Methane and Alcohol gases. The system works when the MQ-2 sensor detects smoke by reading the minimum and maximum limits of data detected by the MQ-2 sensor. The ADC value on the sensor will be processed with Arduino Uno which has been inputted coding on arduino IDE software to control the performance of the exhaust fan using the L298N motor driver by providing the lowest pwm value of 0 to the highest PWM value of 255 specified in the arduino program, then displayed the number of ADC values along with the exhaust fan speed on the LCD, the exhaust fan in response to the air discharge in the ventilasai area of the room, then coding will control all components as instructed coding with the input of the MQ-2 sensor with LCD output, to control the voltage on the exhaust fan.

The result of this final project by testing 10 times using 3 cigarette smoke rods as a prop for its success rate is 100% so that the smoke can be reduced by regulating the speed of the fan as a room air vent to avoid harmful smoke deposition so that it is healthier and safer for health.

Keywords: Smoke, MQ-2 Sensor, Arduino Uno R3, LCD, and Fan/Exhaust Fan.