ABSTRACT

Some cases have been reported by the media about the death of a person (or more) that occurs when they sleep in the car in the condition of the engine and the AC is ON, while the position of the car in the parking or stopping. From the results of the police investigation, the main cause of the majority of these events is a dangerous gas poisoning in the car. One type of harmful gases is carbon monoxide (CO). If inhaled into the body, the CO gas will bind to hemoglobin in the blood, thereby reducing the bonding of oxygen in the blood. The effect is the body of oxygen and causes a limp. Other toxic gases are ammonia (NH3). Contact with high concentrations of ammonia gas can cause lung damage and even death.

To anticipate the accumulation of poisonous gas in the car, in this final project created a tool monitors the content of harmful gases in the car. The device is designed consists of three main blocks, namely input, process and output. Input function as a gas sensor, sensor implemented with MQ-7 (carbon monoxide gas) and the sensor MQ-135 (ammonia gas). Part of the process is implemented with the microcontroller, its function is to analyze the data readout sensor gas content in the car, based on Sugeno fuzzy logic and conclude the final condition becomes categories SAFE, CAUTION, or DANGER. Output section tasked with providing a response in the form of information on the LCD display, alarm and GSM short message (SMS).

Implementation of the design, produce a device that capable to monitoring the content of harmful gases in the car, into three categories (SAFE, CAUTION or DANGER). Based on testing, the sensor MQ-7 and MQ-135 can function properly. Fuzzy logic implementation can be ensured 100% accurate.

Keywords: hazardous gas, car, sensor MQ-7 sensor MQ-135, Microcontroller, Sugeno Fuzzy Logic