ABSTRACT

Carbon monoxide (CO) is a gas produced from incomplete combustion of motor vehicles, flames (wood stoves) and cigarette smoke. Carbon monoxide has the characteristic properties of being odourless, invisible and tasteless. Carbon monoxide can enter the car's cabin through the ventilation and the gaps in the car's interior which are less dense. In this study designed a warning system using the MQ-7 sensor to determine the level of carbon monoxide contained in the car cabin and the ESP32 microcontroller is expected to help prevent the occurrence of passengers who died in the car cabin due to carbon monoxide poisoning. This study uses a decision table to determine which system is designed according to the decisions made. To give the warning, buzzers and LEDs are used to warn passengers when carbon monoxide levels have reached the specified ppm (parts per million) limit, and will later send SMS to give warnings to those closest to them. In the warning system there are 3 provisions, namely when the MQ-7 sensor detects CO < 18ppm, the MQ-7 sensor detects 18-25ppm CO and the MQ-7 sensor detects CO > 25ppm, if the sensor detects > 25ppm then there is a warning from the LED light and sends SMS to loved ones. In the MQ-7 sensor test which was carried out 30 times and compared to AS8700A there were 2 comparison conditions, namely with thin smoke and thick smoke, for thin smoke conditions the sensor had an accuracy of more than 90% with a total value of 91.57% and 91.06 %. Then for thick smoke conditions the sensor has an accuracy below 90% with a total value of 89.64% and 88.70%.

Keywords: Carbon Monoxide, Sensor MQ-7, ESP32.