ABSTRACT

Hazardous gas detection devices such as gas CO, CO2 and NOx are usually found on the public roads, because there are many sources of air pollution such as smoke in motor vehicles can damage the health. But not only the public street alone there were dangerous gases such as CO gas, CO2 and NOx. In the halls of the house or factory, there are gases that would endanger the residents of the house or factory workers.

In this study developed a tool that can detect hazardous gases which resides in the room, using the work of the Microcontroller AT89S51. To realize that TGS 2201 sensors used for sensing gases CO, and NOx and TGS 4161 for CO2. Gas concentrations can be seen in the dot matrix, while the level of danger on the indicator.

When the tool is activated it will censor the gas sensor is in the room. Results from these sensors will be shown into a large dot matrix of gas concentration in the room. If the concentration exceeds the threshold set so that the indicator lights red so it can be a decisive early warning that the room is harmful to humans. The method used to process input from sensors that can detect the achievement of the objectives hazardous gases CO, CO2 and NOx with dot matrix appearance and level of danger that is using the assembly program. The ability of these sensors can detect gases to 300 ppm of CO, CO2 up to 10,000 ppm and NOx gas to 1 ppm.

Keywords: Microcontroller AT89S51, Dot matrix, Sensor TGS 4161, Sensor TGS 2201