

Carbon Monoxide Indicator In Two Wheelers

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Abstract—The world cant able to run without two wheelers. People do not have the awareness of tuning their vehicle in the periodic interval and so harmful gas emission gets increased. Proper awareness should be created among the people about the harmful gas emission. In order to aware the people, there should be an indicator present in the two wheelers. This work introduce carbon monoxide indicator in the two wheelers. One can check the emission rate in the frequent interval and can take remedial action. This prevents degrading the environment from pollution.

Keywords—Carbon monoxide indicator, Two wheelers, Environment, Pollution ,Awareness.

I. INTRODUCTION

Good air quality is one of the most important needs for living being. The air quality is necessary to be optically maintained and improved based on the standard requirements. However, the recent condition shows the air pollution being uncontrollable and worsening due to human activities in transportation. Adam Savage and Jamie Hyneman tried to find out if two wheelers pollute less than cars. They certainly use less gasoline, so there is less carbon dioxide emitted—the amount of CO₂ created is directly proportional to the amount of gas burned. The rest of the comparison does not fall in the two wheeler's favor. In their test, Adam and Jamie tested two wheelers and cars from the past three decades. Apart from carbon dioxide emissions, motorcycles were drastically worse. The two wheelers produced multiples more carbon monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas, a product of incomplete combustion burning of hydrocarbon-based fuels. Carbon monoxide consists of a single carbon atom and a single oxygen atom linked together (CO), the product of incomplete combustion of fuel. Most CO is produced when air-to-fuel ratios are too low in the engine during vehicle starting, when two-wheelers are not tuned properly, and at higher altitudes, where thin air reduces the amount of oxygen available for combustion. Two-thirds of the carbon monoxide emissions come from transportation sources.

A new two wheeler initially do not add pollution to the environment. After some days it starts to pollute the air by means of emitting carbon monoxide. Likewise if each automobile emits carbon monoxide into the atmosphere, world will lands in deep trouble. Therefore one who riding

the two wheeler should have the awareness of carbon monoxide rate emitting from his two wheeler .Our work creates such awareness in peoples mind. The Carbon monoxide indicator made them to tune the vehicle in periodic interval.

II. EXPERIMENTAL SETUP

A. Carbon-monoxide sensor



Fig1. Carbon-monoxide sensor

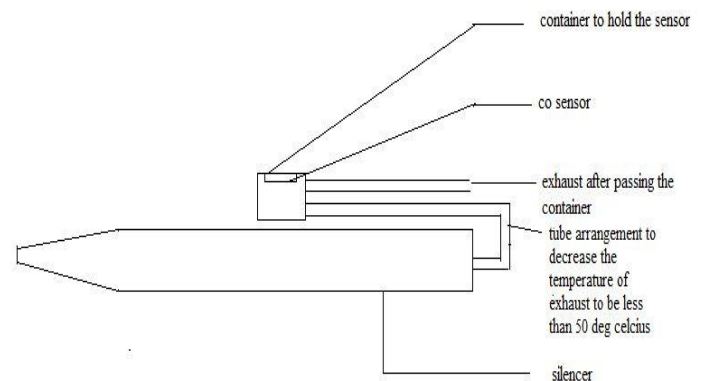


Fig2. Position of co sensor

Fig 1 gives the view of MQ-7 carbon monoxide sensor used in our work. Fig 2 represents the position of carbon monoxide sensor. It is comprised of metal oxide semiconductor layer formed on a Tin-oxide substrate of a sensing chip together with an integrator heater. The heater provides necessary work conditions for work of sensitive components. In presence of detectable gas, the sensor conductivity increases depending on the gas concentration in

the air. A simple electrical circuit can convert the change in conductivity into output signal which corresponds to the gas concentration. In the sensor circuit, the voltage drop across the resistance R_I is the output voltage.

B. Tube to connect Silencer and Rectangular box:

Tube made of copper or steel is used. Black paint is coated inside the tube in order to absorb maximum heat. This is provided to decrease the temperature of the exhaust. The temperature of the exhaust entering the rectangular box should be maintained in such a way that it should be less than 50 degree Celsius. This constrain is made because the sensor withstand up to 50 degree Celsius

C. Rectangular Steel Box:

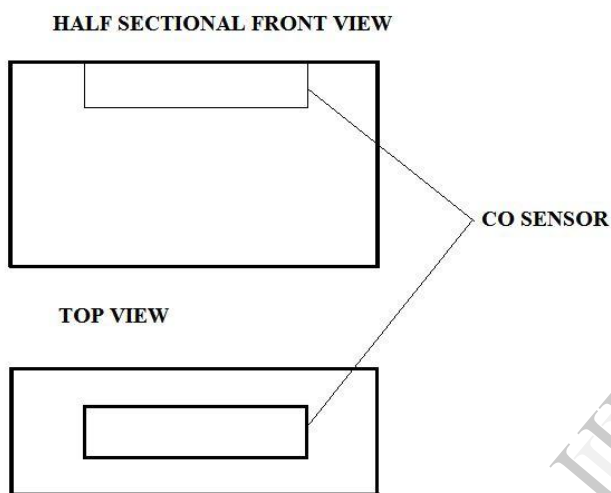


Fig 3:View of Rectangular Steel Box.

Fig 3 gives representation of the rectangular steel box. Inside the rectangular box co sensor is placed. A small rectangular steel box is placed in the rear end of the bike and is above the end of the silencer. The rectangular steel box has the dimension 50mm*30mm*100mm. The rectangular steel box is connected to the silencer by means of the tube arrangement. CO sensor is fixed at the top face of the rectangular steel box.

D. Display setup:

A simple electrical circuit can convert the change in conductivity into output signal which corresponds to the gas concentration. The analog output voltage which is produced across the load resistance is then converted into digital output by using ADC (analog to digital converter). The converted digital value is interfaced through a LCD display there by indicating it to the user.

III. EXPERIMENTATION

The exhaust from the silencer enters the passage and has the contact with co sensor. In presence of detectable gas, the sensor conductivity increases depending on the gas concentration in the air. A simple electrical circuit can convert the change in conductivity into output signal which corresponds to the gas concentration. The voltage drop across the resistance R_I is the output of the sensor circuit. This voltage gets converted into carbon monoxide rate and is shown in the display.

IV. CONCLUSION

This work helps to know about the amount of carbon monoxide emitting from the two wheeler. This made people to think that they are degrading the environment. This helps to remind the people that they should tune the vehicle in periodic interval.

ACKNOWLEDGEMENT

We hereby declare that the paper above is our own thoughts developed into a model and working for future work.

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