

VISVESWARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
KARNATAKA



BASAVESHWAR ENGINEERING COLLEGE, BAGALKOT



DEPARTMENT OF MECHANICAL ENGINEERING

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A PROJECT REPORT ON

**MICROCONTROLLER BASED ELECTRONIC
MILEAGE TESTER**

Project Guide

Dr. S. N. Kurbet

Head of Department

Dr. S. N. Kurbet

SUBMITTED BY

Mr. Anudeep Vaggar

USN: 2BA06ME007

Mr. Avinash Gujjar

USN: 2BA06ME012

Mr. Prashant Betgeri

USN: 2BA06ME061

Mr. Arunkumar Kulkarni

USN: 2BA06ME008

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CHAPTER 1

INTRODUCTION

Today we all know that Mechatronics is an emerging field in engineering. Also, it has become necessary for engineers and technicians to have skills and knowledge that are not confined to a particular field or area of specialization. We are very happy to say that our's this approach of project is valuable to us since a majority of newly designed Mechanical Engineering Systems are Mechatronics Systems. In this project a special emphasis has been given to the digital output of the actual Mileage given by a vehicle.

The proposed System is designed for use in testing vehicle mileage for petrol or diesel powered vehicles. The system will dynamically measure the fuel consumed and total distance traveled by the vehicle and based on this the mileage will be computed. It will not be necessary for the user to keep track of fuel in the tank and total distance traveled, as the device computes the data based upon an average minimum distance of 100m. The user can check the 'Mileage' of the vehicle after completion of 100m travel.

The system is designed using a Mileage-Test-Bottle with a Capacitance-Meter designed specifically to measure fuel flow rate and give the output in the pulse form for every 100ml of fuel flow to the microcomputer, and distance pulses tapped from the vehicles Odometer which is supplied 1 pulse/meter. The Microcontroller used is a P89V51RD2BN type 80C51 core Microcontroller. The system consists of a 16X2' LCD display interfaced to the microcontroller to display and program the mileage computation.

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1.1 OBJECTIVES

- To calculate the quantity of fuel consumption with respect to distance.
- To know quantity of fuel remaining in the fuel tank of the vehicle in the Digital format.
- To determine the exact/accurate mileage of the vehicle.
- To modify presently available Microcontroller based Fuel Consumption Gauging System from Analog to Digital.

1.2 INTRODUCTIONS ABOUT MECHATRONICS

In this project we provide an overview of some of the important contributions to the field of Mechatronics and sensors, actuators, measurements systems microcontroller in particular, that are relevant to this work.

WHAT IS MECHATRONICS?

Mechatronics is an integration of Microprocessor control systems, Electrical systems and Mechanical system. Mechatronics brings together areas of technology involving sensors and measurements systems, drive and actuation systems, analysis of the behavior of systems, and microprocessor systems. Mechatronics systems are classified as a Measurement systems and control systems.

