

MicroController Based Tachometer

Abstract:

- This project focuses on the development of a microcontroller-based tachometer system for accurately measuring the rotational speed of a motor or any rotating machinery.
- The tachometer employs an infrared (IR) sensor to detect the passage of reflective markers on the rotating object, generating digital pulses proportional to the rotational speed.
- These pulses are processed by a microcontroller unit (MCU) programmed in C language to calculate the RPM (revolutions per minute) of the target object.
- The key components of the tachometer system include an IR sensor module, a microcontroller (such as Arduino or PIC), and a digital display (LCD or LED) for visualizing the RPM readings in real-time.
- The MCU interfaces with the IR sensor to capture the pulse frequency, and a mathematical formula is applied to convert this frequency into RPM.
- The project aims to provide an affordable and efficient solution for RPM measurement, suitable for applications in automotive, industrial, and laboratory settings. By leveraging the capabilities of microcontrollers, the tachometer offers improved accuracy, reliability, and versatility compared to traditional analog tachometers.

