

BLDC Motor Speed Control with RPM Display System

ABSTRACT

BLDC (Brushless DC) motor speed control with rpm display system is a system that offers the BLDC motor to run at different speeds and display this speed on LCD display. The importance of BLDC motor is increasing day by day because it has been mostly used in industries for different applications such as spinning, drilling and elevators.

Working

This BLDC motor speed control with rpm display system works on the principle of switching dc supply. The switching dc supply is gained by changing the duty ratio of supplying voltages. In this system, motor drive circuit is triggered at different duty ratio and when it is triggered at a different duty ratio then motor runs at different speeds. Here for demonstration purposes a fan speed is controlled through a microcontroller. When up switch is pressed then the microcontroller set the duty ratio from 10% to 80% and then this duty ratio voltages are given to motor drive circuit, which set the speed of the motor from 0 to 100%. Similarly, for decreasing the speed of motor down switch is pressed again and again until the desired speed is acquired. For displaying the rpm of this motor at LCD display ir sensors have been used here which are interfaced with microcontroller. Microcontroller counts each revolution of motor after receiving the speed signal from ir sensors then displays this speed at LCD display in form of percentage like 10%,20%80% or 100%. So, we can drive the BLDC motor at out desired speed.

Components

- controller.
- BLDC
- Speed sensor
- LCD
- switches

Circuit Diagram



