

Resistive Touch screen controlled contact less speed monitoring and controlling of dc motor with speed limit alerts

The purpose of this project is to control the speed of DC Motor using Microcontroller and touch screen and displayed on LCD. This uses a PWM (Pulse Width Modulation) technique to control the speed of motor from 0% to 100%. This system also alerts the user through buzzer alarm if the speed has crossed predefined threshold level.

Automation is the most frequently spelled term in the field of electronics. The hunger for automation brought many revolutions in the existing technologies. One among the technologies, which had greater developments, is the touch screen sensor. These had greater importance than any other technologies due its user-friendly nature. Touch screen based devices can be easily reachable to the common man due to its simpler operation, and at the same time it challenges the designers of the device.

The speed of the motor is measured using contact-less speed measurement technique. Speed control is done using PWM (Pulse Width Modulation) method. User can increase/decrease the speed of the motor through gentle touch on touch screen also direction can also be controlled.

The controlling device of the whole system is a Microcontroller. The Microcontroller gets input from touch screen sensor and acts accordingly on the motor speed. IR module gives speed of motor to Microcontroller which displays it on LCD. Also the controller takes the responsibility of honing the buzzer whenever the speed has crossed the set threshold level. The Microcontroller used in the project is programmed using Embedded C language.

Features of this project:

1. Touch based controlling of DC motor.
2. LCD display system based monitoring.
3. Automatic speed measurement.

The project focuses on the following areas:

1. Touch screen technology.
2. Interfacing Touch screen to Microcontroller.
3. Embedded C programming.
4. Conversion of AC supply to DC supply.
5. PCB designing.
6. IR communication.

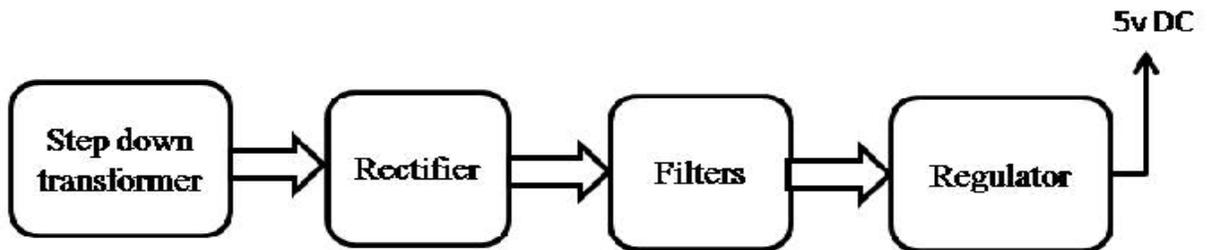
The major building blocks of this project are:

1. Regulated Power supply.
2. Microcontroller.
3. DC Motor with driver.
4. Reset.
5. Buzzer with driver.
6. IR module.
7. LCD Display with driver.
8. Crystal oscillator.
9. LED indicators.

Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

Regulated Power Supply:



Block Diagram:

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