

ABSTRACT

The main objective of this project is to design and develop a multi-detect surface algorithm for home vacuum application. In this project, vacuum controller, (advance controller for multi detect surface) will be proposed and studied. Advance controller describes the discipline where control method are developed that attempt to emulate important characteristics of human intelligence. These characteristics include adaptation and learning, planning under large uncertainty and copying with large amount of data. This project concerned about the vacuum controller motor speed that installed an advance controller. The sensor will detect the surface of the variety floor and give the signal to the controller for determine the speed of the motor. The key point of this project is that this controller can function and could interface with sensor, and finally its own actuator that is rotation of the motor. For this project used PIC 16F873A, sensor and other components. This project is focusing on the automatics function system and control system that bases on a PIC16F873A microcontroller. The usage of the vacuum controller motor speed is to present such items as the user's real environment. It can make our job easier and simple to use.

OBJECTIVES

- ~ Design a vacuum controller motor speed.
- ~ In the hardware development, vacuum controller for multi-detect surface using sensor via microcontroller will be developed.
- ~ Analyze the motor speed as well as its error between the desired speeds with the actual speed to determine the suitable speed of the motor.

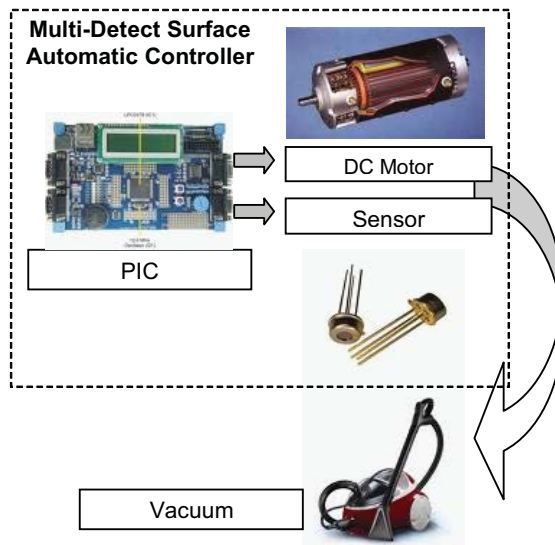


Figure 1: Vacuum Controller Operation Block Diagram

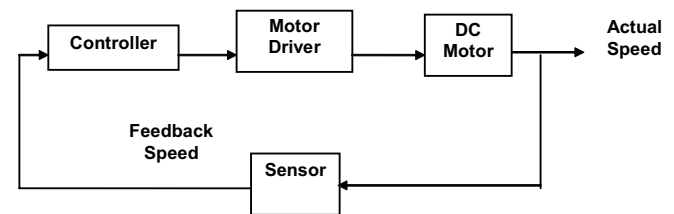


Figure 2: Basic block diagram for DC Motor speed control for Vacuum Motor

ADVANTAGES

The goal of this project is to design multi-detect algorithm for home vacuum application. The success of this project has its own benefit:

- ~ Low cost
- ~ Simple to design
- ~ Low power use
- ~ Make our job easy

NOVELTY

The design concept will be the installation of suitable controller and driver to improve vacuum controller motor speed as well as to determine variety of surface by using sensor.

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