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VOICE CONTROLLED LIFT SERVICE FOR DISABLED PERSON

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Abstract : ***The main aim of this paper is to design and construct a voice operated lift/elevator control system. In this project Arduino programming is used for voice recognition module is used for detecting the floor and stopping the motor rotation. The Single phaseinduction ACmotor (230V,6A) is used for controlling the lift. The microcontroller (ATmega 328) in the arduino is programmed. The voice recognition system which is the input module to the microcontroller takes the voice instructions given by the user as input and the controller judges the instruction. The two channel relay (5V,10A) is connected with contactor (230V,10A)which is used to control the induction motor (single phase 230V,50HZ,6A) The lift upwards or to the downwards, and according to the users voice the switching mechanism controls.***

IndexTerms - ARDUINOUNO, Relay, Voice recognition

I.INTRODUCTION

Elevators is also considered aninelucTable part of our society Elevators till now are all switched based that is it requires humans physical interaction for its movement .So considering different aspects of automated technology we came up with an idea of designing the elevator that would be automated whichwill perform all the task using voice commands of users as input instead of physical input .With just giving a voice command the user can reach the destined floor without any manual work which would provide an ease to user to reach their destined floor during peak hoursand will also give a ease to physically- challenged people Considering the use of technology for each and every purpose the use of elevators as a medium of transport is also considered to be a very essential part .So we have implemented an easiest way of using elevator through voice commands instead of switches which would be mostly beneficial to physically- challenged people and would provide a bonus benefit during peak hours. So the elevator can be further modified that is instead of using switches for moving the elevator there would be a voice recognition chip which will accept the speakers command either to move the elevator up or down command would be processed by the microcontroller and would be fed to the sniper motor and thenecessary actions required would be performed. At present, the lift is operated by buttons which is difficult to operate for blind people and people withdisability. When the blind and disabled people are alone they find it difficult to operate the lift so, this is a problem for these categories of people while using the lift This problem can be solved by using the voice commands to operate the lift. The voice commands are given as aninput and the input is processed and the lift is operated upwards or downwards depending upon the voice input given. This becomes easier for the people with disability to operate the lift using voice commands.

II. FUNCTIONAL BLOCKDIAGRAM

The block diagram consist of single phase ac source, step down transformer bridge rectifier with regulator, arduino unoATmega328, voice recognition sensor,Two channel relay, contactors and single phase induction motor**.** Single phase AC supply from power supply block is fed to the step down transformer in which we can step down the voltage from 230V to 12V ac The 230V ac is given to the Bridge rectifier with regulator Then the required 9V DC is obtained The voice recognition sensor is programmed and connected with the arduino uno Atmega328 microcontroller Two channel relay can

receive the signal from the arduino and make the switched on and off with respect to the voice command as given By the user.

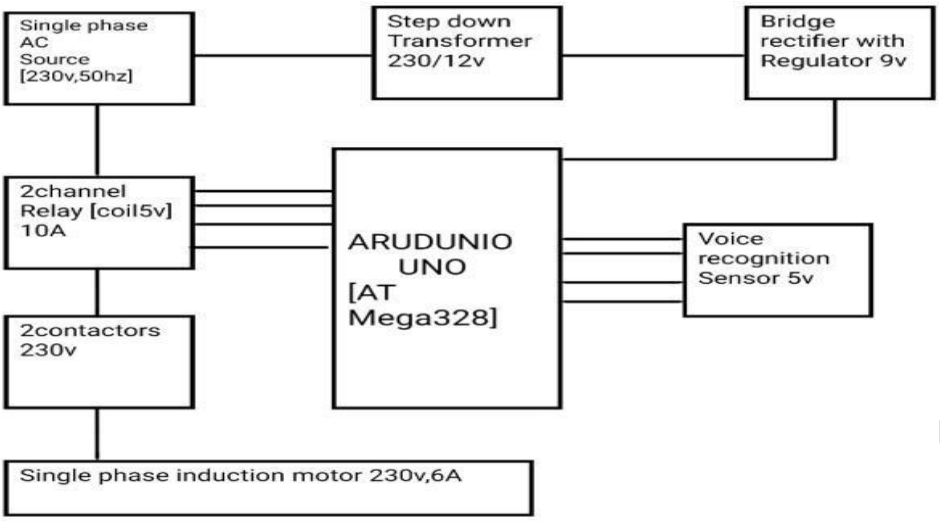

Figure. 1 Block Diagram

When the relay channel one is getting on the contactor which is connected with relay one is get energized make the contact with single phase induction motor run at forward direction When the relay channel two is getting on the contactor which is connected with relay two is get energized make the contact with single phase induction motor run at reverse direction The relay switching mechanism can be controlled by delay time. the delay time is fixed in the arduino programme.

III . FUNCTIONAL CIRCUIT DIAGRAM

The above diagram the circuitdiagram for voice controlled lift servicefor disabled person using arduino consiss of single phase ac source, step down transformer bridge rectifier with regulator, arduino uno ATmega328,voive recognition sensor, Two channel relay, contactors and single phase induction motor. Single phase AC supply from power supplyblock is fed to the step down transformer in which we can step downthe voltage from 230V to 12V ac The 230V ac is given to the Bridge rectifierwith regulator.

Two channel relay can receive the signal from the arduino and make the switched on and off with respect to thevoice command as given By the user.When the relay channel one is getting on the contactor which is connected with relay one is get energized make the contact with single phase inductionmotor run at forward direction When the relay channel two is getting on the contactor which is connected with relay two is get energized make the contact with single phase induction motor run at reverse direction. The relay switching mechanism can be controlled by delay time. the delay time is fixed in the arduino programme.

IV. WORKING

The main component or the heart of the entire implementation is the voice recognition chip. The user entering the elevator would just give a voice command for moving up or down instead of manually pressing the switches.

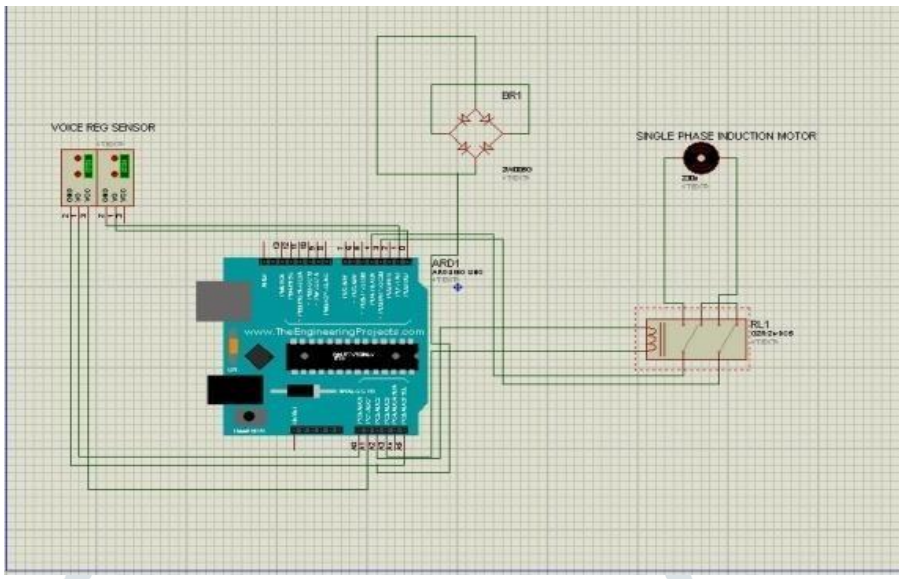

Figure 2 Functional Circuit Diagram

The voice recognition module and take that input provided by the speaker and would convert it to digital signal and in turn would be fed as an input to the microcontroller The microcontroller will compare the input from the stored input and if the result says to move the elevator downwards then it will accelerate the motor downwards and if the result says to move upward then the motor would be accelerated in upward direction thereby leading to the movement of the lift and allowing the speaker to get- off at the desired floor it would also be having a emergency switch for worst condition if the lift gets stuck.

The main aim of this project is to design and construct a voice operated lift/elevator control system. In this project Arduino programming is used for voice recognition module is used for detecting the floor and stopping the motorrotation. The Single phase induction AC motor(**230V,6A**) is used for controlling the lift. The microcontroller (**AT mega 328**) in the arduino is programmed.

Figure 3 Project Model

The voice recognition system which is the input module to the microcontroller takes the voice instructions given by the user as input and the controller judges the instruction . The two channel relay(5V,10A) is connected with contactors (230V,10A)which is used to control the induction motor (single phase 230V,50HZ,6A).The lift upwards or to the downwards, and according to the users voice the switching mechanism controls.

V PROJECT IMPLEMENTATION

The hardware picture of voice controlled lift service for disabled persons using arduino is shown below. The main aim of this project is to design and construct a voice operated lift/elevator control system.In this project Arduino programming is used for voice recognition module is used for detecting the floor and stopping the motor rotation The Single phase induction AC motor(230V,6A) isUsed for controlling the lift The microcontroller (AT mega 328)in the arduino is programmed.

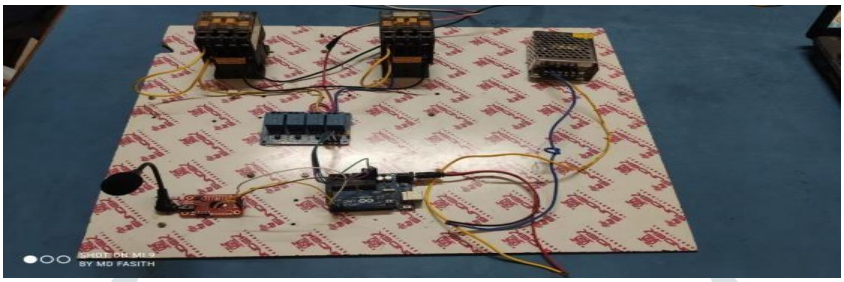

Figure 4 Relay Circuit

The voice recognition system which is the input module to the microcontroller takes the voice instructions given by the user as input and the controller judges theinstruction. The two channel relay (5V,10A) is connected with contactors (230V,10A) which is used to control the induction motor (single phase 230V,50HZ,6A).The lift upwards or to the downwards, and according to the users voice the switching mechanism controls.

VI . CONCLUSION

This project will be helpful forpeople with physical disabilities and blind people. With the help of voice command people can operate the lift .This project eliminates the complex wiring for push buttons. Lift operator is not required for this kind of lift our paper describes a newway of implementing an elevator which can be operated without the use ofswitches only a voice command would beenough to reach to the desired destination. It will provide ease to the user for using the elevator service and would also provide great benefit to physically-impaired people thereby resolving their dependencies on other for using the elevator. It resolves the issue of pressing the switches all the time for moving up or down which becomes quitedifficult in crowded hours.

VII . REFERENCE

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