REMOTE CONTROL OF A THREE PHASEMOTOR USING GSM

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Abstract: **Every system is now automated in order to meet new problems in today's environment. Automated systems require fewer manual procedures, allowing for more flexibility, reliability, and accuracy. As a result, in order to give superior performance, every industry chooses automated control systems, particularly in the field of electronics.**
Mobile phones are being utilized as a remote control for a three-phase motor pump that is used in agriculture. Due to India's frequent power outages and irregular voltage levels, efficient water distribution to the fields is required in all-weather circumstances. This is accomplished by transferring information in the form of messages between the user phone and GSM. This system is made up of a microcontroller that is linked to a GSM phone and a motor. This method can be used to operate any gadget in regions where there is no access to the internet. However, in this new architecture, the system does not need to be reprogrammed to manage a different appliance without modifying the microcontroller's programme. The user will be able to operate the appliance by making a call or sending a message from his phone. The system created with the Microcontroller in this work incorporates over-current protection, dry running, and single phasing. It is predicted that this application will facilitate motor access to a large extent.

Index Terms–GSM, RELAY, ARDUINO.

I. INTRODUCTION

The goal of this study is to create a cost-effective solution for remote control of induction motors utilizing text messaging on mobile phones. The number of mobile users around the world has increased dramatically in recent years. Because of technological advancements and lower hardware costs, remote monitoring of processes, equipment, and other devices is becoming increasingly popular. Short Messaging Service (SMS) is a cellular network technique that provides a basic interfacewith only the destination cell phone address and message requirement, with no header / protocol overhead.

II. LITERATURE SURVEY

The work done by us is the development of circuit by using IoT, GSM and WIFI and the equipment's can be handled fromdifferent places. This work will be beneficial for agricultural, industrial, domestic, commercial projects also. Automationdone in this field is shown here by using the literature review, various authors has worked in the same field and by using different ways. Some authors used vlsi embedded system some used algorithms some used programs some used automation and some used the electronic applications. This work is totally different from others. We used here the circuit diagram and the GSM module and WIFI modules are connected in this circuit to the unit 5 that is ATMEGA328P. The ports of the unit are connected with two modules. Again, these unit 5 is connected with different four units and then to theload.The system is pure circuit base and not program base. We have done the literature review for this work. And published the review work over here. All authors are made their conclusions and the results made here. Mahesh Kumar

M. Jangid, et al. (2016) published the work on Android application for single phase motor control using IVRS and GSM

in this study they focused on android is software used for mobile devices that includes a system of operating, middle ware and main applications. They used android apps are made in a languages like java and runningon an implicit machine known as Dalvik created by Microsoft. They also applied the android sdk provides the tools and apps necessaryto start developing applications on the androidplatform using the java programming

language. The purpose of the final application is to help farmer to use easily with the regional language. They used the design of the self-made design. Theproject will be designed to develop an application in android motor control system. The 4 operation of the alternating current motor is better suited for companies where device like motor is used and as per need as they work on android cellphones.

III. PROPOSED SYSTEM

Remote control application for the induction motor pump which is used in the agriculture. Due to frequent power cuts and abnormal voltage conditions in India, it is necessary to distribute water efficiently to the fields during normal conditions. This is carried out by exchanging the information between the user phone and GSM in the form of messages. This system is developed with Microcontroller which in connected to the GSM and the motor. The microcontroller includes the protection against over-current, dry running and single phasing. It is expected that thisapplication provides easy access of motor to a great extent.
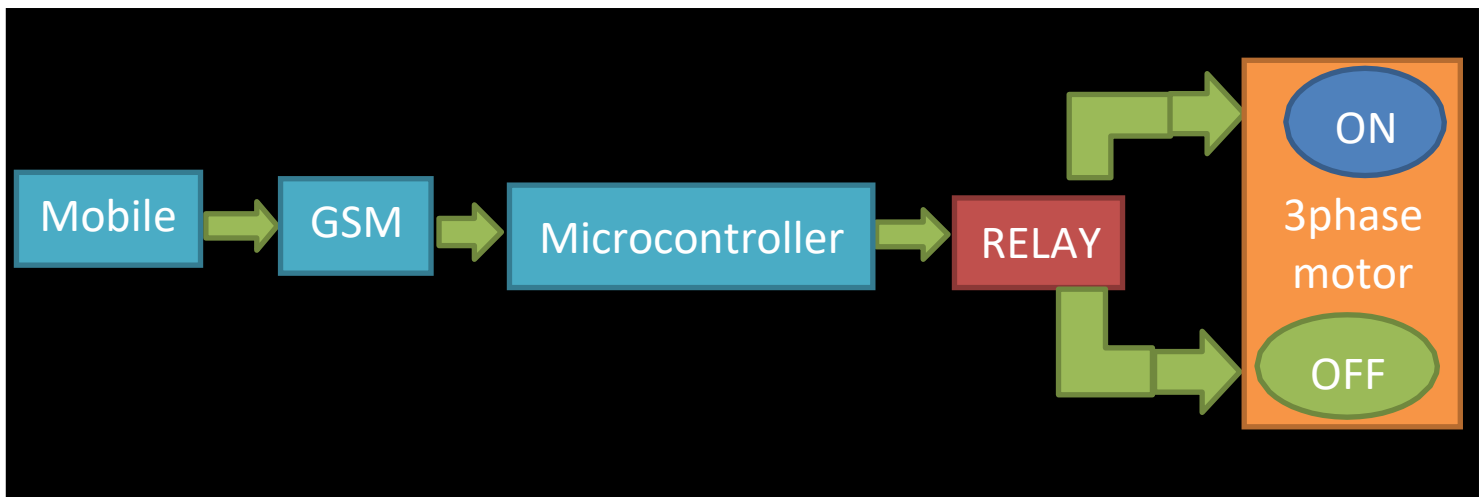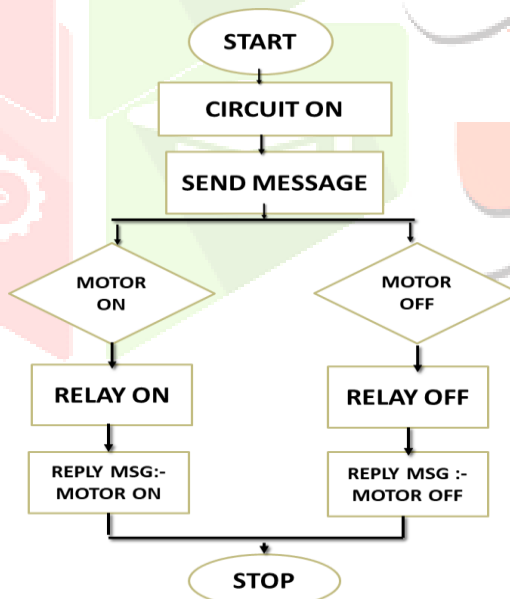

Fig 1: Block diagram

III. FLOWCHART

Fig 2. Flowchart

(a) Connecting Project model to a Three phase starter board.

(b) Connecting stepper motor 1 to a green(on) switch and stepper motor 2 to a red (off) switch.

(c) Setting up the sim in the module, messaging to the sim with the mobile and controlling theThree phase motor starterboard switch.

(d) Automated systems have fewer manual operations so that the flexibility, reliabilities arehigh and accurate.

(e) This system is developed with Microcontroller includes the protection against Over-current,dry running and singlephasing.

(f) It is expected that this application provides easy access of motor to a Great extent.

IV. ADVANTAGES AND DISADVANTAGES

A. Advantages

- Farmers even without a smart phone can use this motor as they can receive messages through GSM.
- People passionate about farming can continue their passion even by living in the cities by using the motor from any area. As irrigation is automated, this is very cost effective.

B. Disadvantages
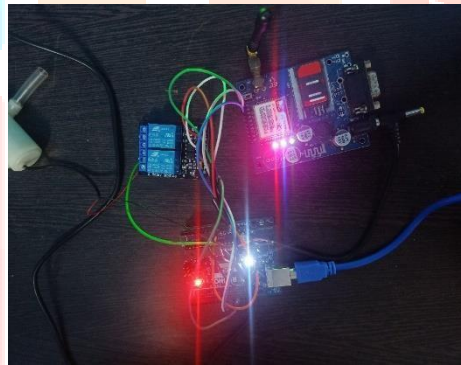
- Unavailability of network.

V. RESULTS

Fig 3.: Final output of our circuit

Three phase motor is controlled by GSM that is by sending message through mobile. This in turn controls the overflow and dry running of motor.

VI. CONCLUSION

We are protecting three phase motors with this system from over voltage, over current, single phasing, and dry run. By sending a message to the system, we can turn on or off the motor. If an abnormal condition occurs, the system will immediately shut down the motor and notify the user of the problem.

Over voltage, over current, single phasing, and dry run are all protected by the system. It also alerts the user to an abnormal state, and the motor is turned off automatically. This aids in the consistent distribution of water at regular intervals, as well as the reduction of labor costs and the avoidance of undesirable water spills. It also saves water and provides real-time feedback on all processes, which is a big benefit of this technology.

VII. REFERENCES

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