3 Phase Load Control Using GSM Module

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Abstract - *All induction Load require a starter to start the Load. The starter is used according to the Load ratings. In the developed system the three phase load can start or stop from long distance wirelessly by using GSM module. This starter works with a mobile device. In this system a mobile works as a signal transmitter and other GSM Module is signal receiver. The mobile transmitter calls to receiver GSM Module. The call is automatically received by receiving GSM Module. When a numeric button is pressed during this time the transmitter mobile send a DTMF signal, this signal is received by receiving GSM Module and Load is start or stop according to numeric button is assigned for it. So this system provides fully automatic monitoring.*

Key Words: GSM MODULE, 3φ STARTER, CURRENT SENSOR, ATmega328.

1. INTRODUCTION

Industrial automation is necessary in today's world. Automation minimizes human efforts. Our time is well used because of automation. Production is fast growing. Due to automation, the cost is reduced. Earlier, when we are talking about automated devices that could do anything at the instigation of a controller, we are looking into the face of the future, but it has become a reality today. An automated device can replace a good manpower.

Control of phase load is very much needed in Industry 3. Many machines are used in industry. There are devices available on the market in today's world to control one single load at a time. This system can simultaneously control two loads. This saves time, space and cost.

Three phase machines are used in the industry. They're very expensive. This system provides them with electricity protection. Sometimes the voltage supplied to machines is fluctuated due to electrical losses. Under voltage and over voltage, machine failure is permanent. Electricity sometimes becomes one phase. It's very high to repair costs. To avoid this, the machines must be protected. We are using load control devices for this purpose.

It is related to agriculture in India's 70 percent population. Agriculture is therefore a very important area. We need to invent new equipment to minimize farmers ' efforts. This system can control water pumps for agriculture.

This system can control and check the status from anywhere in the world. GSM module controls the entire device. To start

the engine, all induction motors require a starter. Depending on the engine ratings, the starter is used. Wireless three-phase induction motor device, without using wire, can start the motor from a long distance. With a mobile device, this starter works. A mobile transmitter works as a signal transmitter in this system and a signal receiver is the GSM module. The receiver module is called by the mobile transmitter. The call is received automatically through the receipt of the module.

Some wise scientist once said control system is a system where the machine can be shut down whenever we want. This is the difference between machine controlled and machine uncontrolled. Our project is to make efficient and dynamic this control system.

2. PROPOSED WORK SYSTEM
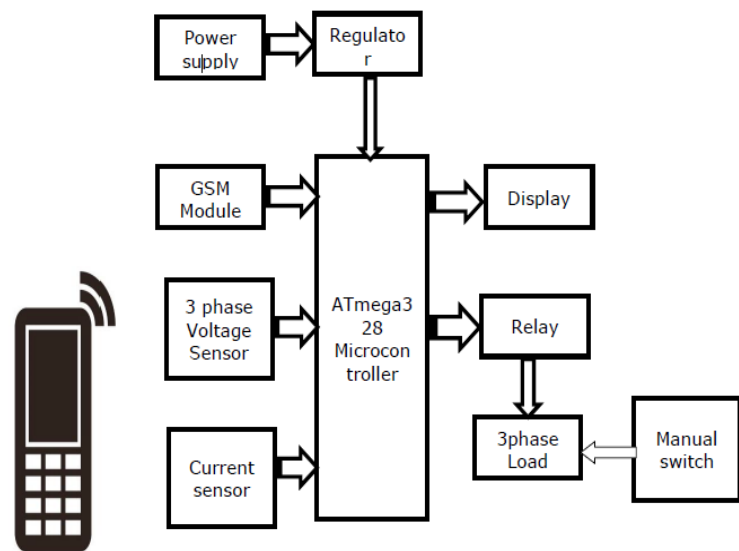
2.1 BLOCK DIAGRAM

Fig 2.1 Block diagram of 3 Phase load control using GSM MODULE

2.2 PROPOSED WORK

This will involve prototype model design, programming and development. Our prototype model methodology includes the following steps:

Mobile section of the transmitter is used as a transmitter. Whenever the mobile call is made, it is automatically received after two rings by the receiver GSM module. Now it is possibe to use the mobile transmitter in hand as a remote.

The key 1 is assigned for starting of the first motor. When key 1 is pressed, a DTMF signal is received by GSM module. When DTMF signal is received by GSM, it gives output at the pins. The relay is like a switch. The relay is a switch connected to microcontroller. After receiving signal at the microcontroller, microcontroller checks the input voltage and phase of the electricity if and only if voltage is sufficient and phase is three phase then and only then first load is start and it continuous check the current, voltages and phase if they are false then load will off.

Key 2 is assigned for second load. After receiving signal at the microcontroller. Microcontroller checks the input voltage and phase of the electricity if and only if voltage is sufficient and phase is three phase then and only then second load is start and it continuously check the current, voltages and phase if they are false then load will off.

Key 3 is assigned to check the status of whole device and load. The status information sends to authorized person via using GSM module. Key 8 is assigned to turn off first load.

Key 9 is assigned to turn off second load. Key 0 is assigned to turn off both loads at a time.
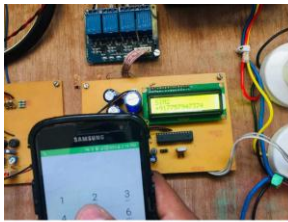
2.3 FLOWCHART
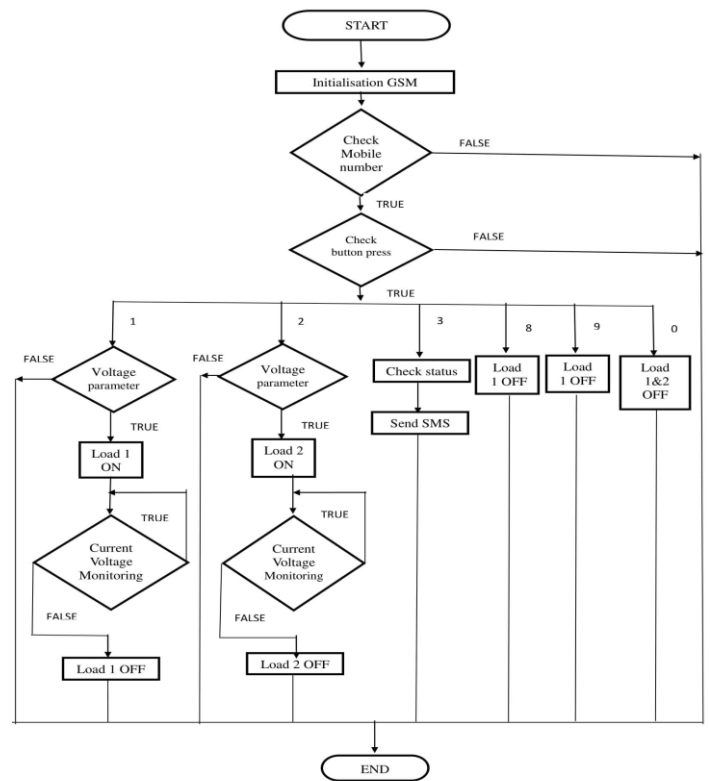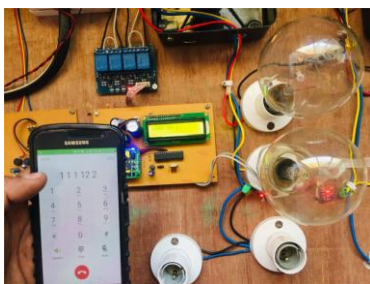

3. RESULT

3.1 PROPOSED MODEL

Condition 1: Authorized person call answered.

Condition 2: Load 1 on.
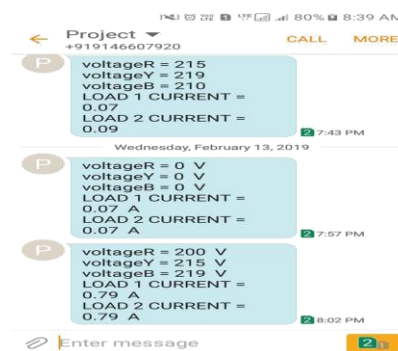

Condition 3: Load 2 on.

Condition 3: power cut off due to single phase.

Condition 3: Sending SMS.

Parameter displayed also on mobile.

4. CONCLUSIONS

3 Phase Load Control Using the GSM module, three phase loads are monitored and controlled fully automatically. With the use of wireless GSM module, three phase loads can be started or stopped from long distance in this system. As well as the load, it can protect against overload and under load automatically. This system minimizes the efforts of humans.

5. REFERENCES

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