



HIGH SPEED OVER VOLTAGE PROTECTION CIRCUIT FOR SENSITIVE LOAD

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ABSTRACT- Internet of Things (IoT) technology is bringing a revolution in the digital world after the discoveries in the field of computer and Internet. So we can use the concept of IoT technology in the power system. Today the world is moving fast towards the more effective and efficient smart by using the smart grid to replace the current outdated technologies. Therefore, we may use both technologies to improve the effectiveness and efficiency of the current power system. IoT and smart grid will be the ideal combination of two technologies, improving India's current electricity structure. Utilising this technology will also have a number of benefits. There are numerous issues with the conventional power grid system that can be fixed. The goal of the article is to enhance power distribution in India, where issues like load shedding are frequent

A bus bar in electrical power distribution refers to thick strips of copper Aluminium that conduct electricity within a switchboard, distribution board, substation, or other electrical apparatus. In this project bus bar can be protected from the over current condition. Industrial instruments failures have many causes and one of the main causes is over load.

Key Words: The main objective of this project is to design and implement a system that uses microcontroller and other peripheral devices to protect power devices.

1. INTRODUCTION

These circuits are vulnerable to momentary failures like overloading or shorting. A transient problem would open a traditional circuit breaker or blow a fuse, shutting down the line until a technician could manually close the breaker or replace the blown fuse. However, an automatic overload protection system will attempt to reenergize the line multiple times according to a predetermined schedule. The automatic overload protection system circuit breaker will remain closed if the transient fault has been resolved, and the power line will continue its usual operation.

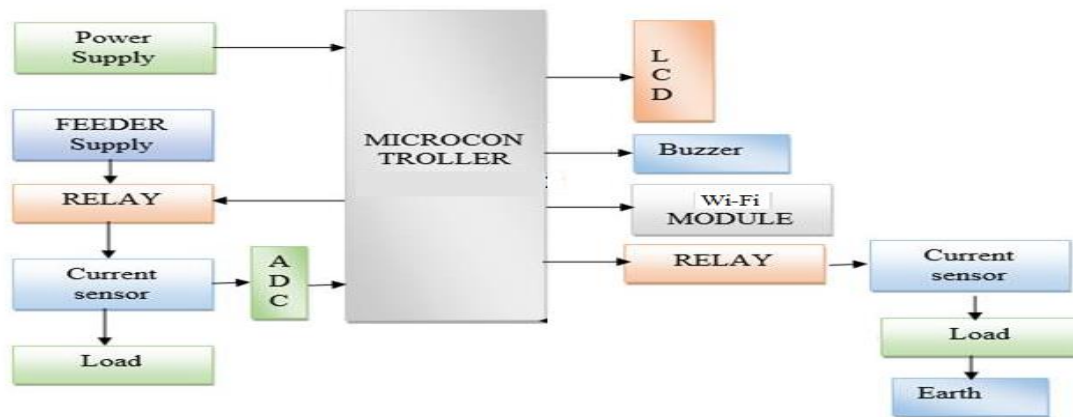


Fig.1 Block Diagram

DESCRIPTION:

Atmega328P Microcontroller The microcontroller acts as an intermediate agent between the voice recognition module and the motors to drive the wheelchair. It is a microcontroller board based on the ATmega328P. It has a 16 MHz quartz crystal and a reset button.

Current sensor ACS712 current sensor operates from 5V and outputs analog voltage proportional to current measured on the sensing terminals. We can simply use a microcontroller ADC to read the values. A relay is an electrically operated switch. Many relays use an electromagnet to mechanically operate a switch, but other operating principles are also used, such as solid-state relays. Relays are used where it is necessary to control a circuit by a low-power signal (with complete electrical isolation between control and controlled circuits), or where several circuits

WORKING

We must first determine the entire load current flowing through the bus bar in order to safeguard it from an overcurrent condition. Here, the load current is measured using a current sensor, and the output of the current sensor is sent to an ADC for conversion into digital data.

The microcontroller receives that ADC output for monitoring purposes.

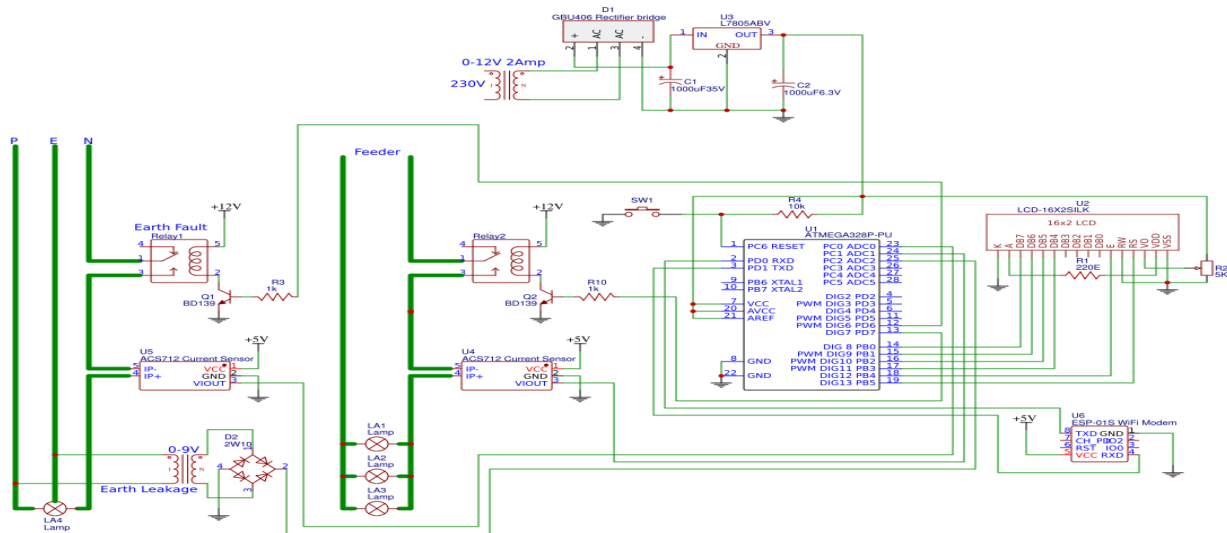
We will use a relay to trip the load when the current exceeds a specified threshold.

We are using 230v bulbs as a load in our project. By turning on more loads, we're going to increa

se the load.

More loads turned on result in an overload condition, which the microcontroller will identify and An earth-fault usually involves a partial breakdown of winding insulation to earth. The resulting leakage current is considerably less than the short circuit current. The earth fault may continue for a long time and cause considerable damage before if ultimately ,develops into a short circuit and removed from the system under these circumstances ,it is profitable to employ earth fault relay, which is essentially an over current relay of low setting and operates as soon as earth-fault or leak develops. This scheme is used for the winding of the transformer connected in star where the neutral point is either solidly earthed through impedance. The relay used is of high impedance type to meet the scheme for external fault.

II. CIRCUIT DIAGRAM



III. RESULTS AND CONCLUSION

In this study, we investigated a control and monitoring scheme for feeder line overload using line temperature measurements. In this project, we created a system that continuously controls and monitors the load and communicates that information to the user via a wi-fi module.



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