

POWER THEFT DETECTION USING GSM

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ABSTRACT

Electrical energy is very important for everyday life and spine for the industry. Electricity power is indiscipline to our daily life with increasing need of electricity, the energy robbery is also growing, electricity theft is a hassle that keeps to plague electricity region across the country, the goal of this paper is to design one of these gadgets with a purpose to try and reduce the illegal use of power and also lessen the probabilities of theft. In this research we have focused on the most common practice of stealing power which is hooking a line cable. The system has been designed to detect the theft and also inform to the nearest substation. This model tries to achieve theft control.

Keyword : - *Power Theft , Microcontroller, Electricity, and GSM*

1. INTRODUCTION

Electricity is the modern man's most convenient and useful form of energy without which the present social infrastructure would not be feasible. When significance of electricity is at the growing aspect, then the stealing of this energy or illegal intake of electricity from the transmission traces could be prevented. Electricity theft has come to be a incredible task to the energy board. Electricity theft is the most important hassle in recent days which causes lot of loss to electricity boards. In international locations like India, the conditions are greater often, if we can save those thefts, we can store lot of power. Electricity theft detection system is used to discover an unauthorized tapping on distribution lines.

The proposed system could be hidden on the electric poles and as quickly as a try is made for the theft, it'll send a message to control unit of electricity board and consumer. this will shield distribution community from power theft accomplished with the aid of meter tampering, tapping and many others. In domestic electricity connection as well as industrial electricity supply there is a continuous growing of electricity thefts across the India, which ends up in lack of electricity energy and due to which we are facing the frequent issues of load shading in urban in addition to rural areas also. So as to overcome the need of electricity for whole state is in high demand Energy management and monitoring has a significant role for the proper utilization and better energy management.

2. LITERATURE SURVEY

Detection of power theft in every house and in industry for different methods of theft. A system is designed which will try to reduce the unlawful use of electricity and also lessen the probabilities of theft. Detect the theft and try to acquire theft manipulate. Because of electric powered electricity theft, about 30-35 percent of the earnings earned through the electric board is going waste. Previous attempt to monitor the power theft has not resulted in well-ordered manner because of the unlawful practices of some of the employs and consumers. This studies goals at reducing all these difficulties by fabricating a simple system to send a message whenever there is a power theft activity at a certain location.

The electricity theft detection using microcontroller has been proposed. This system reduces the cost of man power for providing information regarding theft by consumers This paper considers a model to reduce the power theft. Use of GSM in this system provides a various advantage of wireless system. The government saves money by the

manipulation of theft in energy meter and also more beneficial for customer side and the government side in this system the data collection and manipulation task become fast and easier. Also, it can be easily installed before for consumer energy meter for checking the consumer status.

In the recent survey, the statement highlighted that in the special drives, Pune district saw power theft worth Rs. 3.41 crore exposed across 2,535 places the highest in western Maharashtra.

3. METHODOLOGY

Hardware used: Microprocessor (ATMEGA328), GSM Module, LCD - 16*2, Current Sensor - AC3712, Voltage Regulator (IC7805), Transformer – 12V 3Amp, Capacitor – 25V 1000uf, Diode – 1n5048, Resistor – 1k

Software used: Arduino Nano, GSM Module

System Architecture: The proposed system consists of the sensing part, controlling part, monitoring part and a message sending and receiving part. In the monitoring part the sensor included are main current sensor and auxiliary current sensor. This sensor will sense the current of each pole and the values will be displayed on LCD display the sensor are connected to microcontroller ATMEGA328 which is the controlling part. The GSM is switched ON based on the instruction to the microcontroller. An LCD is employed to show the current of each line on the pole. The system works in such a way that when the theft is occurred the value of auxiliary current sensor mismatches with main current sensor and the microcontroller reads it and provide signal to the GSM module and the message is sent to the consumer or nearer substation and the theft are identified.

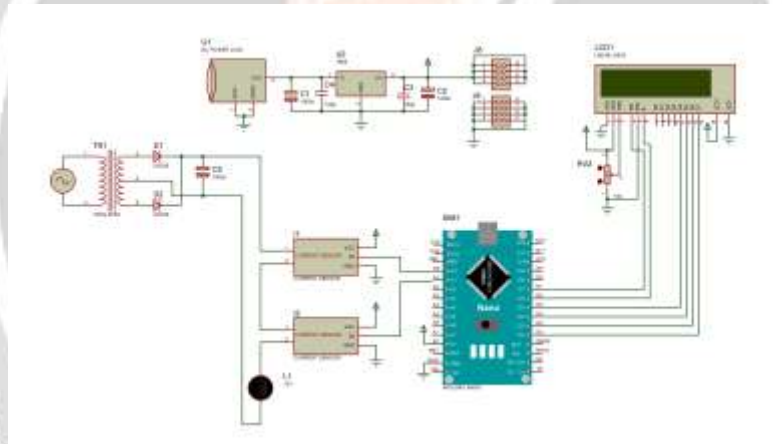


Fig (a) : Circuit Diagram

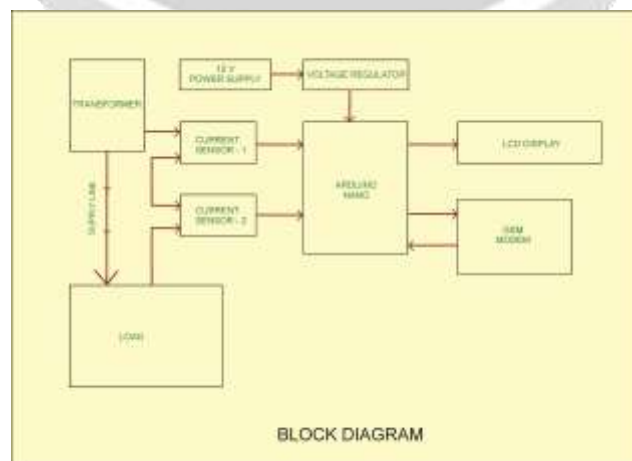


Fig (b) : Block Diagram

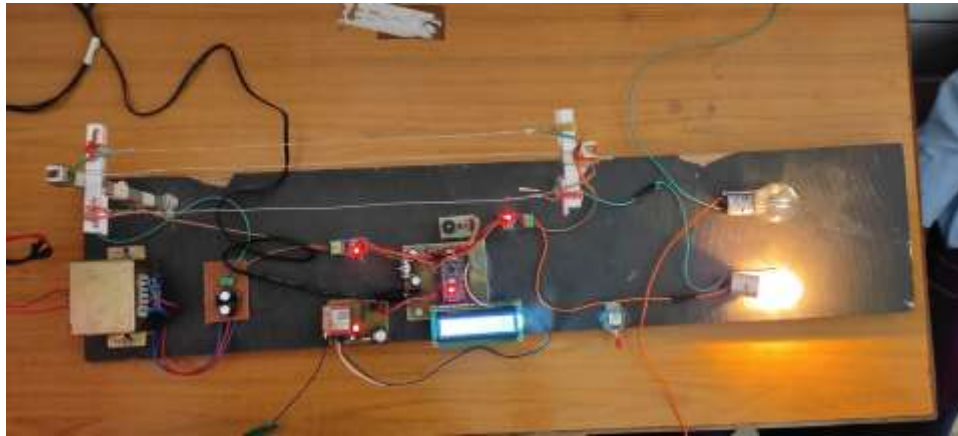


Fig (c): Implemented prototype of power theft system

4. RESULT

This system is operated when the theft is occurred, when the hooking is done on the distribution line the values of current sensor changes and the microcontroller reads it and give the signal to GSM module, GSM is the global system for mobile communication when it gets the signal from microcontroller it sends the message to nearer substation or consumer, through this we can caught the theft.

5. CONCLUSIONS

A power theft system using GSM has been implemented successfully using the concept of GSM which can prove to be a boon for distribution system. The traditional system for power theft system is labor-intensive and time consuming. The proposed system saves time, money and human efforts. It helps to find the theft and save the illegal power losses.

6. REFERENCES

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