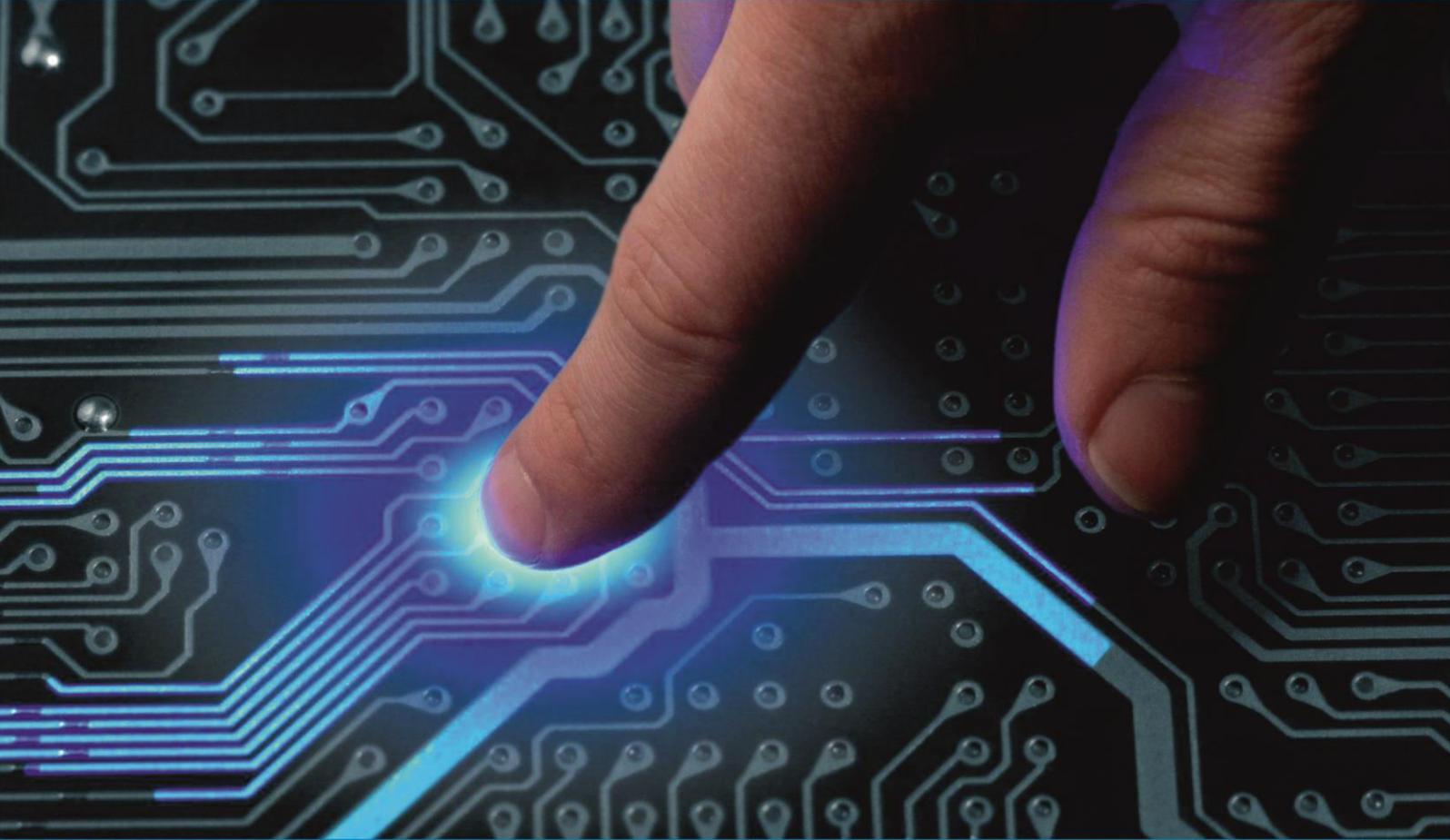




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Shock Preventing System in Industry

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ABSTRACT: Present industry is increasingly shifting towards automation. Two standard parts of the present modern computerizations are programmable regulators. To help the drawn-out work and to serve the humankind, today there is an overall propensity to build up a savvy activity. Because of this automation industry the human working with heavy load there will be chance of accident. Our objective of this project is to create a shock prevention system to avoid chance heavy load passing through industrial workers body. Our project is designed with wireless based wireless monitoring system to monitor the voltage passing through human body in transmitter side. It will be designed with Arduino nano and potential transformer interface with controller. In RF receiver side used to cut off the entire load while heavy load passing through human body. It will be controlled by Arduino uno in Receiver side control. Using RF transmitter and receiver we are wirelessly monitoring load and supply flow through human body.

KEYWORDS: Shock prevention, Wireless monitoring, Transmitter, Receiver, Intelligent operation.

I. INTRODUCTION

Electric stuns are a difficult issue in the mining climate. Due to incredibly wide running utilization of electrically fueled gear in the mining business, the peril to staff because of electrical 'stun and related wounds are not limited to any single region yet cover the whole range of mining action. Electrical mishaps, bringing about close to home injury, because of ill-advised or complete absence of establishing of electrically worked mining machines, structure a critical level of the by and large electrical mishap. Mainly electric accident occurs in industry the human death is increasing. For this reason we creating a shock prevention system for human or industry worker to avoid chance of heavy load passed through human body. Present industry is increasingly shifting towards automation. Two guideline segments of the present mechanical mechanizations are programmable regulators. To help the drawn-out work and to serve the humankind, today there is an overall inclination to build up an insightful activity. Because of this automation industry the human working with heavy load there will be chance of accident.

II. RELATED WORK

In paper [1] authors used sound engineering principles. IEC, IEV technologies are used to give the prevention against shock.

In paper [2] authors used Scene Modelling technology. Single-phase grounding faults in distribution networks based on personal safety protection is the major impediment in this paper.

In paper [3] authors used EMD-T, IMF technology. In this paper the signal is usually corrupted by artifacts through the recording process.

In paper [4] authors used RCD technology. Data filter is used in this paper, that is the major impediment. In paper [5] authors used statistics. It only shows the graph of the total fatality accidents occurs in the Japan.

In paper [6] Study on identifying method of electric shock current amplitude based on Independent Component Analysis. Using an ICA model will be the disadvantage to this project.

In paper [7] Study on equivalent circuit of the human body and its transient response against electric shock. The human body is composed of various fluids and tissues, all with complex electrical properties.

III. COMPONENTS REQUIRED

A. SOFTWARE REQUIREMENT:

● Arduino IDE software compiler version 8.1 is open source software and it's easily available for operating systems like MAC, windows, and Linux runs on the java platform that comes with inbuilt function and therefore the commands that play a significant role for debugging, editing, and for compiling the code within the environment. The IDE environment mainly has two basic parts: Editor and therefore the compiler where former is employed for writing the desired code and later is employed for compiling and uploading the code within the given Arduino UNO module.

B.HARDWARE REQUIREMENT:

1.Arduino UNO:

This Arduino UNO microcontroller is used to interface with all other components of a system. It has six (A0-A5) Analog pins and 14 digital I/O pins . The clock frequency is 16MHz.

2.RF Transmitter Receiver:

The band is act as transmitter and it transmit RF signal.

- Wavelength is 1mm to 100km.
- Frequency range is 3kHz to 300 GHz.
- RF signal travels at the speed of light.

3.Potential transformer:

The potential transformer is used for metering and also give protection in high voltage circuits.

- Range is 50 to 200 VA.
- Negligible for frequencies up to 1 kHz.

4.Relay:

It connects or disconnects two circuits.

5.Rectifiers:

It converting AC to DC power supply.

- Operating range is -55 °C to +125
- Maximum input voltage is 560V
- Output voltage is 2V

IV.WORKING

fig 1. Block diagram of proposed system(Transmitter)

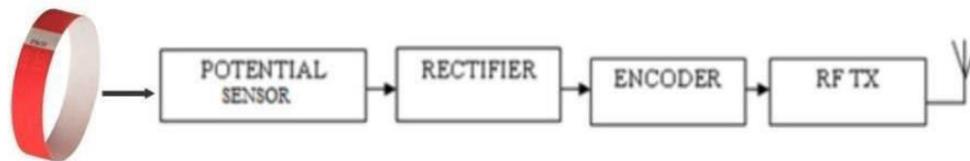
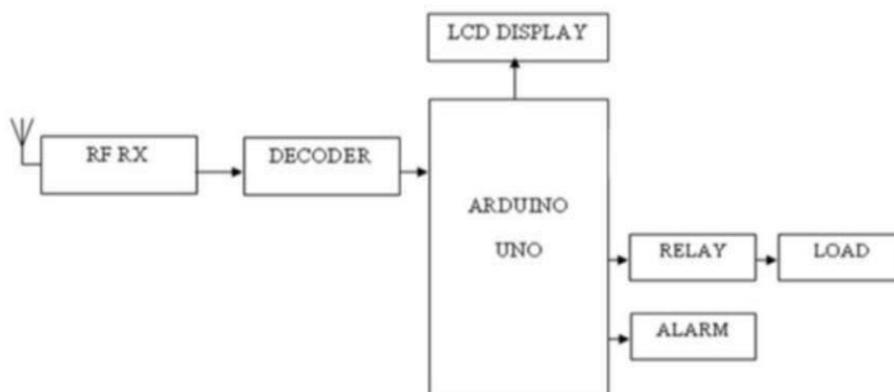


fig 2. Block diagram of proposed system(Receiver)



The working of our proposed system is initially the electric voltage normally passed in industry. Industry workers working with industrial motors or machines. When the high voltage is passed

through worker body entire supply is cutoff. The potential transformer is interfaced with Arduino nano it is a transmitter side RF transmitter. It will be place with human body. The potential transformer is used monitor the voltage of level passing through worker body. When it will reach above normal voltage level or overload the entire load is cutoff by RF transmitter and it will be automatically received by RF receiver. That emergency time the alarm is activated and Supply is cutoff by using Relay. The receiving unit controlled by Arduino Uno. In case of heavy load is passed to human body the supply is cutoff, the emergency alarm is activated.

V. RESULTS

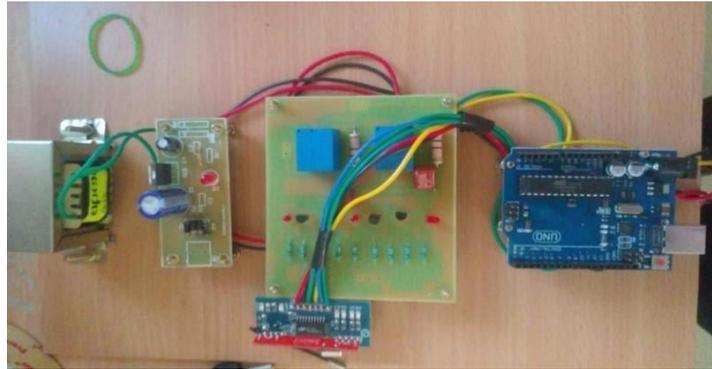


fig 3. Receiver side circuit with transformer



fig 4. LCD display connected with Arduino UNO

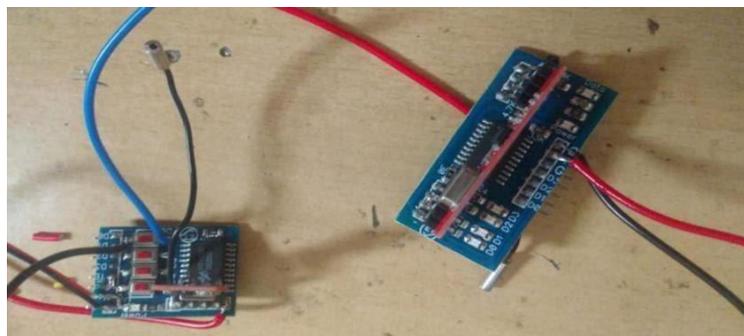


fig 5. Transmitter and Receiver

VICONCLUSION AND FUTURE WORK

The advancement in science and innovation is a constant cycle. New things and new innovation are being imagined. As the advancement creates bit by bit, we can imagine about the future where thing we may have each spot. The proposed framework dependent on Arduino uno and Arduino nano microcontroller is discovered to be more minimized, easy to understand also, less mind boggling, which can promptly be utilized to perform. Despite the way that it is arranged recollecting about the prerequisite for industry, it can loosened up for various purposes, for instance, business and assessment applications. Because of the likelihood of high innovation (Atmel microcontroller) utilized this is completely programming controlled with less equipment circuit. The part makes this system is the base for future structures. The standard of the advancement of science is that "nothing is unthinkable". So we will anticipate a brilliant and refined world. The main feature his RF based wireless monitoring system and control system used in our project.

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BIOGRAPHY

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