



FAULT DETECTION IN THREE PHASE TRANSMISSION LINE USING ARDUINO UNO

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ABSTRACT: In our daily life the requirement of electrical applications increases and therefore the efficient And powerful control of electrical transmission device required. Electrical surroundings can have plenty of disturbance in nature, because of herbal failures like storms, cyclones or heavy rains transmission and distribution traces may also cause damage. The electric cord may also reduce and fall on ground, this ends in very dangerous for humans and might turn out to be dangerous.in wet seasons or in a essential climate situation in a transmission line faults may also occurs.so discover the faults and dependable and strong verbal exchange like Arduino uno era inserted of many verbal exchange used save human life and also prevent the harm produced during short circuit. this electrical danger by providing the fault detection and automatically stops the electricity to the damaged line and also conveys the message to the electricity board to clear the fault.

Key Words: Arduino uno module , LCD ,Relay ,LED ,Bridge rectifier, Capacitor (1000) micro farad, Driver Transformer, resistor 1kohm ,Diode, Potentiometer,

I. INTRODUCTION:

Now a days electricity are very important in our life. In the power system there are various types of the fault occurs due to natural calamity. Due to short circuit or fault is more saviour in strength device that may harm electric equipment. So this fault ought to be cast off as quickly as possible. Line to floor fault is largest challenge for electric engineer's to discover the precise vicinity of the fault .so fault can be recognized via way of means of designing of programmable software program which might established within side the Arduino uno. It will suggests the precise vicinity of the fault and varieties of fault. The unique safety schemes that would be useful via way of means of the use of verbal exchange scheme to boom the accuracy & reliability. There are a few examples of fault over loading strong faults this is Single line to floor, double line to ground, line to line, three phase short circuit Faults), over voltage & under voltage fault.

II. PROPOSED SYSTEM BLOCK DIAGRAM

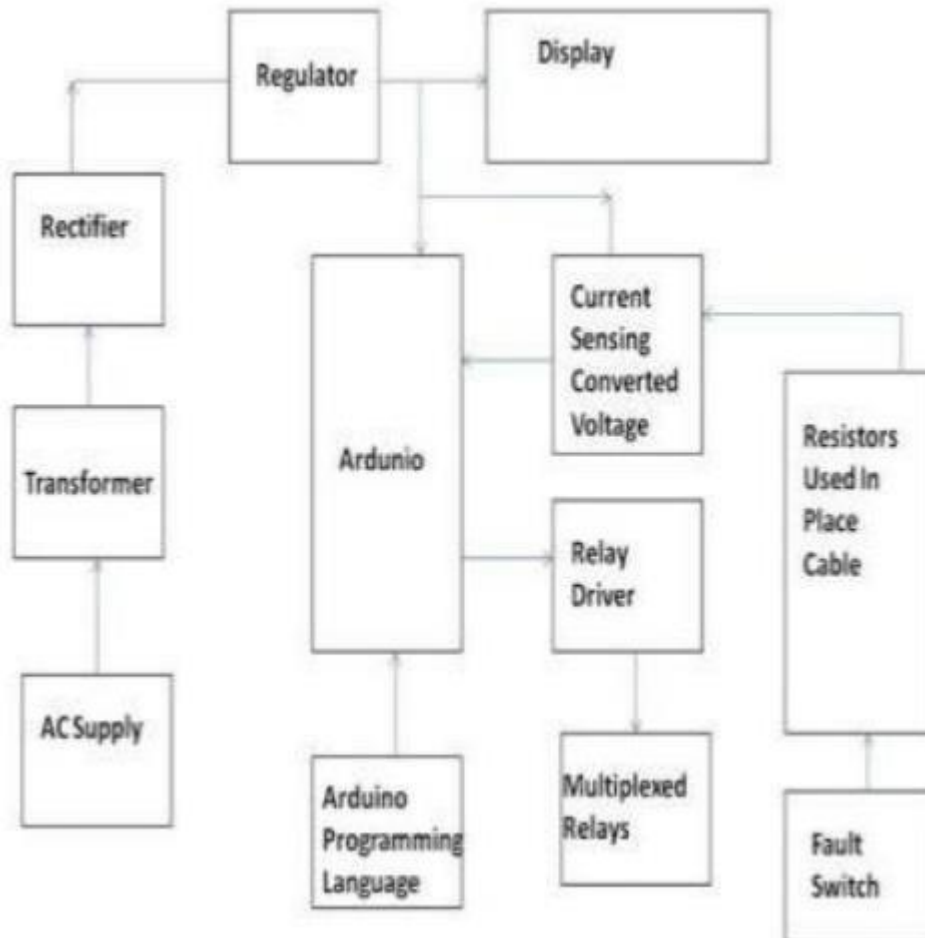


Fig.1 - Proposed system block diagram

2.1 ARDUINO UNO

The Arduino UNO is a microcontroller board based on the ATmega328 (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6-analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with AC-to-DC adapter or battery to get started. The UNO differs from all preceding boards in that it does not use the FTDI USB-to serial driver chip. Instead, it features the ATmega16U2 (Atmega8U2 up to version R2) programmed as a USB-to serial converter.



Fig. 2- Arduino uno

2.2 LCD

LCD (Liquid Crystal Display) screen is an electronic display module and find a wide range of applications. A 16x2 LCD display is very basic module and is very commonly used in various devices and circuits. A 16x2 LCD means it can display 16 characters per line and there are 2 such lines. In this LCD each character is displayed in 5x7 pixel matrix. This LCD has two registers, namely, Command and Data. Here we show temperature and the fault occur message.



Fig. 3- LCD

2.3 RELAY

It is an electromagnetic device which is used to isolate two circuits electrically and connect them magnetically. They are very useful devices and allow one circuit to switch another one while they are completely separate. They are often used to interface an electronic circuit (working at a low voltage) to an electrical circuit which works at very high voltage. For example, a relay can make a 5V DC battery circuit to switch a 230V AC mains circuit. In this project we use 6V DC SPDT type Relay.



Fig. 4- Relay

III. METHODOLOGY

- First of all make the code and install it in Arduino uno
- Use resistor three transmission line created. And four moving switches per phase are used to create fault.
- And for that code is written as if fault is occurred due to 1st moving switch in R phase then LCD will display the NF RYB phase red yellow blue LED is used

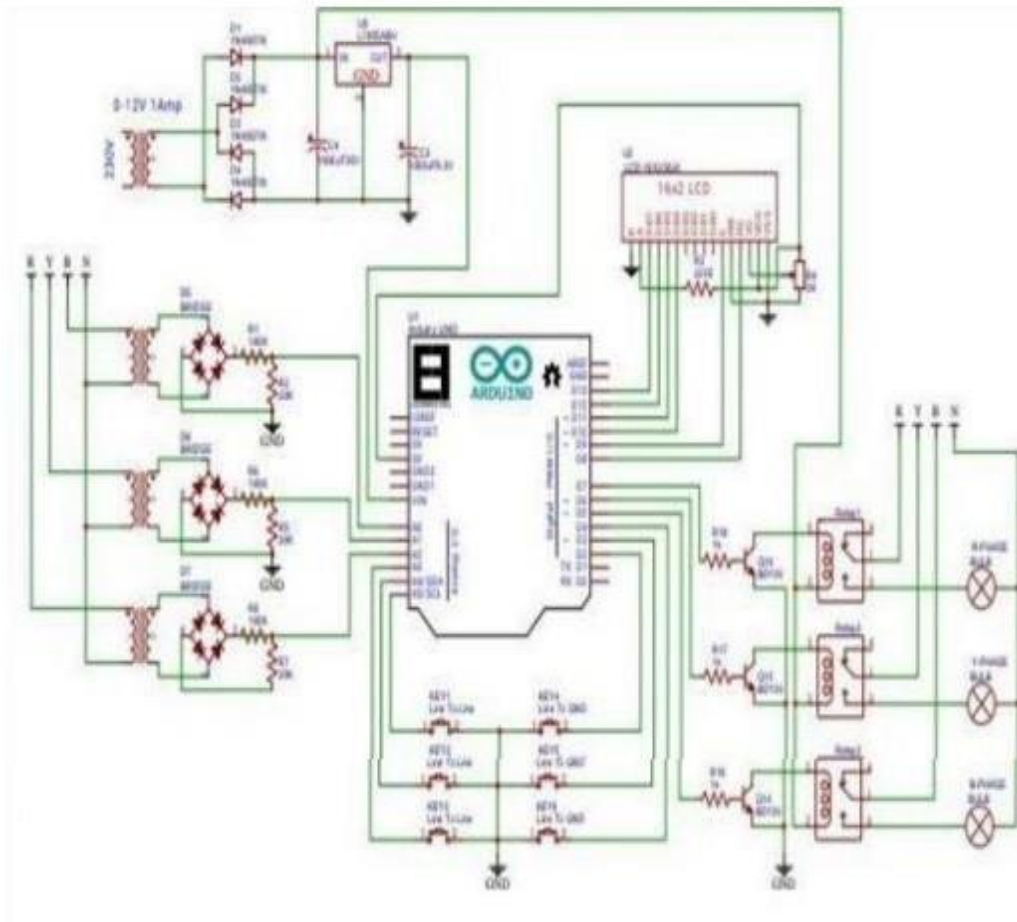


Fig.5 - Connection diag.

IV. APPLICATIONS

- 1] Industrial fault detection system
- 2] It is used in distribution and transmission fault detection system
- 3] It can be used in mines



4.1 ADVANTAGES

- 1] Arduino based technology provides major sophistications & flexibilities.
- 2] Minimizes human interface.
- 3] Improve the system availability and performance

4.2 FUTURE SCOPE:

- 1) In future we can make a voice call which give information about fault and fault location.
- 2) At present we are displaying fault on LCD And it can be display on MSEB Officescomputer

V. CONCLUSION

In the paper diverse faults had been simulated to broaden an automated tripping mechanism for the 3 section deliver gadget at the same time as brief fault and everlasting faults occur. Here relay used for the fault analysis. Short length fault again to the deliver to the weight straight away known as as brief journey at the same time as lengthy length shall bring about everlasting journey.

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