

IOT Based Transmission line fault monitoring system using Arduino with Twilio SMS, Thingspeak

<https://www.youtube.com/watch?v=9QYw61Ru3hs>

The main aim of this project is to design a three-phase transmission line fault detection using an Arduino UNO and display the fault type on LCD module.

This system detects such types of faults line-line fault, open circuit fault, line to line-line, line –line ground, line-ground fault. This proposed model uses the concept of Ohms law to detect the faults which is quick, reliable and cost effective. This system consists of ESP8266 WI-FI module to send the data into the thingspeak cloud. Esp32 module is uses to send the alert intimation to user mobile through Twilio web application.

Here the current sensing circuits made a set of resistors are interfaced to Arduino micro controller at ADC port for providing digital data to the microcontroller. Hence the fault is detecting in transmission lines, this data upload into the thingspeak cloud along with date and time and alert notification will send to the user mobile through Twilio web app also microcontroller will display the fault name on LCD module and activate Buzzer for alerts. This system will give the indication of particular phase fault through RED, GREEN and YELLOW LEDs. To achieve this task microcontroller loaded program written in embedded C language.

Objectives:

- ⦿ Design a three-phase fault analysis system.
- ⦿ It will detect line-line fault, open circuit fault, line to line-line, line –line ground, line-ground fault.
- ⦿ R,Y,B fault indication using LEDs.
- ⦿ Alert in abnormal condition using Buzzer.
- ⦿ Visible alerts using LCD display.
- ⦿ Wireless data monitoring using thingspeak API.

- ⦿ Sending alert notification using Twilio APP.

The main blocks of this project are:

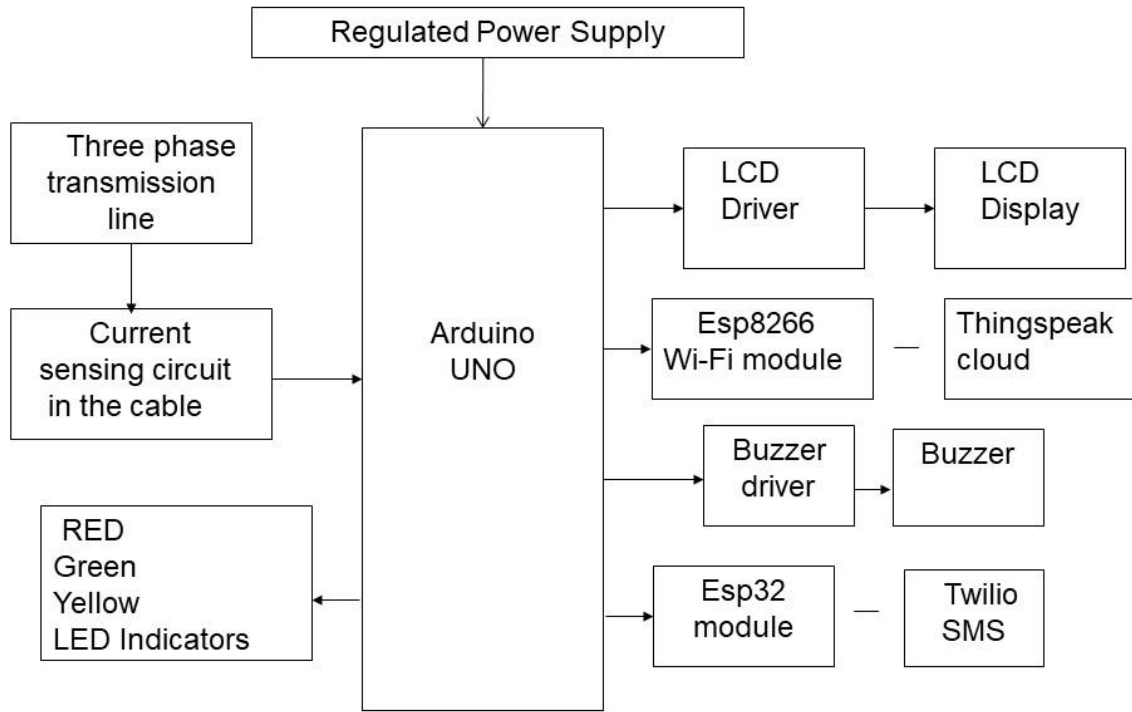
- Adapter power supply.
- Arduino UNO Microcontroller.
- Three phase transmission lines.
- Resistor.
- LCD with driver.
- Esp8266 Wi-Fi module.
- Esp32 Module.
- Buzzer.
- RED, GREEN, YELLOW LEDs.

Software's used:

- ⦿ Embedded C programming.
- ⦿ Arduino IDE studio for dumping code into Micro controller.
- ⦿ Express SCH for Circuit design.

Block Diagram:

BLOCK DIAGRAM



BLOCK DIAGRAM

