Department of Electrical, Electronics, and Communication Engineering

GITAM School of Technology,

GITAM (Deemed to be University), Bengaluru

Title: UNDERGROUND CABLE FAULT DETECTION WITH ALERT BUZZER

Project supervisor: Dr Rohan Prasad

Cluster Name: CS2

Project Coordinator: Dr Rohan Prasad

ABSTRACT

The "Underground Cable Fault Detection with Alert Buzzer" project aims to address the critical challenge of locating faults in underground cables efficiently and cost-effectively. This system leverages Arduino MCP, an LCD display, a voltage sensor, a DHT11 sensor, a power supply, and a buzzer to detect and alert users about cable faults. The voltage sensor measures voltage levels along the cable, identifying abnormalities indicative of a fault, while the DHT11 sensor monitors environmental parameters that may contribute to cable degradation.

When a fault is detected, the system pinpoints its location and displays the information on an LCD screen for easy visualization. Simultaneously, an audible alert is triggered using a buzzer to draw immediate attention to the issue. This real-time fault detection system enhances maintenance efficiency by reducing downtime and minimizing the need for extensive manual inspections.

This solution is particularly valuable for industries and urban areas with extensive underground cable networks, offering a reliable and user-friendly approach to ensuring the integrity and performance of electrical infrastructure.

Keywords: Arduino, Voltage Sensor, Fault Location, Alert Buzzer

Extended Project Objectives (up to 2-4 Bullet points)

- **Efficient Fault Detection:** Develop a system to detect faults in underground cables accurately and in real-time, minimizing downtime and improving operational efficiency.
- **Fault Localization:** Integrate technology to pinpoint the exact location of the fault along the cable, reducing the need for extensive manual inspection.
- **Automated Alerts:** Implement an audible buzzer system and visual display on an LCD to promptly notify users of detected faults for quick corrective action.
- **Environmental Monitoring:** Use the DHT11 sensor to monitor environmental parameters (e.g., temperature, humidity) that may contribute to cable degradation, enabling predictive maintenance.

Ghant chart for Extended Project PROJ3999-

	14-Nov	24-Nov	4-Dec	14-Dec	24-Dec	3-Jan	13-Jan
PROJECT STATEMENT			███	███			
ABSTRACT		███			███		
LITERATURE SURVEY				███	███	███	
PROJECT SETUP						███	███

Suggest 2 IEEE Conference targets-

IEEE PES Transmission and Distribution Conference and Exposition

https://www.ieeegtd.org/

POWER ELECTRONICS CONVERTERS IN TRANSPORTATION AND ENERGY APPLICATION

https://conference.iitbbs.ac.in/pectea2025/

TEAM MEMBERS:

Nischitha J(BU21EECE0200036)

Shaik Mahammad Shafi(BU21EECE0200044)

Basava Raj G Naganagouder (BU21EECE0200060)

(Project Supervisor Name)
Sign with date