

# 3-Phase Transmission Line Fault Detection using Arduino Nano

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**Abstract:** *This project addresses the need for Power grids to suffer frequent faults, highlighting the need for improved transmission line protection. This paper proposes an Arduino-based fault detection system for enhanced reliability and safety. The system utilizes current transformers to sense variations and potential impedance measurements for fault location.*

*This system offers rapid fault identification and response, reducing downtime and Further more, Arduino's low cost makes this a feasible solution for improving power transmission line reliability and safety. Transmission lines form a critical part of the power distribution network, ensuring the flow of electricity from power plants to consumers*

**Keywords:** Fault Detection, Transmission Line, Arduino Nano, Three-Phase System, Real-Time Monitoring, Electrical Faults

