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| **Arduino based Underground Cable Fault Detection** |  |  |

The objective of this project is to determine the distance of underground cable fault from base station in kilometers USING AN Arduino board. The underground cable system is a common practice followed in many urban areas. While a fault occurs for some reason, at that time the repairing process related to that particular cable is difficult due to not knowing the exact location of the cable fault.

The proposed system is to find the exact location of the fault. The project uses the standard concept of Ohms law i.e., when a low DC voltage is applied at the feeder end through a series resistor (Cable lines), then current would vary depending upon the location of fault in the cable. In case there is a short circuit (Line to Ground), the voltage across series resistors changes accordingly, which is then fed to inbuilt ADC of Arduino board to develop precise digital data for display in kilometers.

The project is assembled with a set of resistors representing cable length in KM’s and fault creation is made by a set of switches at every known KM to cross check the accuracy of the same. The fault occurring at a particular distance and the respective phase is displayed on a LCD interfaced to the Arduino board. Further this project can be enhanced by using capacitor in an ac circuit to measure the impedance which can even locate the open circuited cable, unlike the short circuited fault only using resistors in DC circuit as followed in the above proposed project.



**Hardware Requirements**

* LCD
* Crystal
* Relays
* Relay Driver IC
* Transformer
* Diodes
* Voltage Regulator
* Resistors
* Capacitors
* ATmega AVR series Microcontroller
* LEDs
* slide switches
* Arduino board