Underground Cable Fault Distance Locator

ABSTRACT: The aim of this project is to detect the location of fault in underground cable lines. The proposed system finds the exact location of the open circuit fault. This system uses an 16F887 micro controller and a rectified dc supply. Here the project uses a capacitance method. When the current is flow through to the wire than the electromagnetic field is induced which is sense by a Darlington pair i.e. it removes an unwanted noise than it will be filtered and then pass through a voltage regulator gives a constantly 5v supply and then embedded IC is used to represent a fault. The project is assembled with capacitance method and representing fault in terms of yes or no. The fault occurring at a particular distance is displayed on a Liquid crystal display (LCD) interfaced to the microcontroller 16x2 LCD display connected to the microcontroller to display the information. The project will be implemented by using capacitor in an AC circuit to measure the impedance which can locate the open circuited cable. Whenever a fault occurs in a cable the buzzer produces the alarm to alert and to take an immediate action by workers. Generally, we used to overhead lines. We can easily identify the faults but in rushed places or familiar cities we couldn’t use overhead lines. So, we are moving to underground cables. Underground cables used largely in urban area instead of overhead lines. We can’t easily identify the faults in the underground cables. This project deals with microcontroller, buzzer and LCD. This proposes greatly reduces the time and operates effectively.

Circuit diagram :-