Distance Calculation for Underground Cable Fault.

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Abstract: *Nowadays underground cables are used over than overhead lines in urban areas. Locating the fault in the underground (UG) cable is tedious and there is a probability of damaging the insulation while digging the cable. The proposed system offers easy and smart fault detection by automating it using a ATmega16 controller. The basic concept of Ohm's law is applied at the feeder end though a series resistor. In case of short circuit of LL or LLG or LG the current flowing in the faulty sections will vary depending on the length of the line. This paper aims at estimating the location of fault distance and intimate. It is predictable to find a serious solution in maintenance environment of electric power applications to find extensive length of power cables using electrical means. This paper clarifies about length measurement of cable which can be lengthy for finding the location of open circuit point on a power cable using passive electrical parameters like capacitance. For the parameter calculation micro controller helped with display devices and resistive circuit are used. The microcontroller use algorithm to find the capacitance of the underground cable. The algorithm also computes the time charge ratio, with the help of passive parameters like current limiting resistance and definite capacitance of cable. The time charge ratio thus services the microcontroller to estimate the length of the cable.*

Keywords: Underground (UG); Line-Line Ground (LLG); cables; Calculate;

REFERENCES

[1]. P. Sawatpipat and Tayjasanant, "Fault classification for Thailand's transmission lines based on discrete wavelet transform", International Conference on Electrical Engineering and Information Technology, 2010.

[2]. M. Jaya, R.D. Baraga, R. Vanuatu and D.K. Mohanta, "Robust transmission line fault classification using wavelet multi-resolution analysis.", Computers & Electrical Engineering, May 2013.

[3]. B. Bhuvneshwari, A. Jenifer, J. John Jenifer, S. Durga Devi and G. Shanthi, "Underground Cable Fault Distance Locator", Asian Journal of Applied Science and Technology (AJAST), Volume 1, Issue 3, Pages 95-98

[4]. A. D. Dhivya and Sowmya, "Development of a Prototype Underground Cable Fault Detector". International Journal of Electrical, Electronics and Computer Systems, 2014.

[5]. J. P. Singh, N. S. Pal and S. Singh, "Underground Cable Fault Distance Locator", International Journal of Scientific Research and Management Studies (IJSRMS), Volume 3 Issue 1, pp. 21-26, 2016.

[6]. S. Reshma, G. Monika, P. Ashwini, "Underground Cable Fault Distance Locator By Using Microcontroller", International Journal of Engineering Sciences & Research Technology, Vol. 5, 2016.

[7]. S. Shahir, S. Tariq, A. Bangi and K. Khot, "Underground Cable Fault Detector Using GSM" International Journal of Research In Science & Engineering, 2017.

[8]. A. Gupta, R. Sharma, R. Meena, R. Choudhary and R. Kumar, "Distance Calculation for Underground Cable Fault", International Journal of Engineering and Management Research, March - April 2016.