





















Table 3: Table of value of short circuit fault

S/NO	SWITCH OPEN	VOLTAGE DROP CROSS RESISTOR	DISTANT AT WHICH FAULT OCCURS
1	SW4	0.45-0.99	2KM
2	SW5	2.05-2.60	4KM
3	SW6	3.27-3.50	6KM

## Conclusion

Nowadays, electrical energy is being increasingly demanded and in order to maintain reliability and security to an acceptable level, new technologies for protection and control of power schemes are needed. For distribution system, underground system is very important these days. In this project, a method that employs simple ohms law for fault classification and location in medium voltage underground system is designed. To begin, this approach is based on voltage divider rule. For this reason, Arduino uno and protus software are used for simulation. Different types of faults with different fault locations are simulated by arduino software to prepared input data. On the other hand, in protus software, two arduino based method of fault classifier and fault location estimation were designed. Models were trained and then tested with different set of data. From the results, different types of faults could be classified and located on the cable with high accuracy. The percentage error between arduino output and real output is less than three percent. This shows that the proposed technique is able to offer acceptable accuracy in both of the fault classification and fault location estimation. Moreover, Arduino uno could be used as a part of a new generation of high speed advanced fault locators.

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