

FINAL YEAR PROJECT REPORT  
DIPLOMA IN ELECTRICAL (POWER) ENGINEERING  
SCHOOL OF ENGINEERING  
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TOPIC : A DUAL-VOLTAGE ELECTRONIC MEGGER

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## ABSTRACT

Megaohmmeter or better known as meger is an important measuring instrument in Electrical Power, especially for insulation testing. First there was an insulation tester, a hand driven type, incorporating a built-in generator and a constant DC voltage circuit to provide a stable output.

Then there was the electronic or transistorised type megger which uses electronic circuit and batteries to supply the power. The basic concept of the hand driven type and the electronic or transistorised type megger is the same. Both types of megger only measure at a single voltage.

As technology advances, now there is a dual-voltage electronic megger where we will discuss it in detail in this report.

In the first chapter we will discuss about the needs of the megger and it's application.

In the next chapter we will discuss the construction of the project, from the making of the p.c.b. components used and their assembly, wiring and the problem that we had during the constructions. We will also discuss the principle of the dual voltage electronic megger circuit.

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## 1.1 PURPOSE OF TESTING AN INSTALLATION

The main purpose of in testing an installation is to detect faults before any dangerous situations anise.

The main tests carried out on an electrical installation are :

- i) verification of polarity tests
- ii) insulation tests, and
- iii) earthing tests.

The tests have to be carried out on new installations ,on additions to existing installations and periodically on existing installations.

As our project is the "Megger" we will only discuss about the testing of insulation where the megger is being used.

### 1.1.1 INSULATION TESTS

The purpose of insulation tests is to ensure that there is no possibility of leakage currents flowing between insulated conductors and also to ensure that there is no leakage of current between the conductors of the installations and 'the general mass of earth'.