FACULTY OF ELECTRICAL ENGINEERING

UNIVERSITI TEKNOLOGI MARA

JOHOR

FINAL REPORT:

AUTOMATIC ELCB SWITCHING

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DECLARATION OF ORIGINAL WORK

Student's Declaration:

We, Mohd Luqman Hakim B Hakbar (2012483068) Hasan B Mohd Ali (2012534183) being members of final year project declare that this report contains only work completed by our group except for information obtained from literature, company or university sources. All information from these other sources has been duly referenced and acknowledge in accordance with the University Teknologi Mara (UiTM) Policy on Plagiarism.

Furthermore, we declare that in completing the project, the individual group members had the following responsibilities and contributed in the following proportions to the final outcomes of the project:

Name	Student's ID		% Contribution	Signature
Mohd Luqman Hakim B Hakbar	2012483068	1. Collecting information 2. Writing report 3. Material survey 4. Protot e re aration	50%	
Hasan B Mohd Ali	2012534183	1. Collecting information 2. Presentation Materials 3. Materials survey 4. Protot e re aration	50%	

Supervisor's Declaration:

I,Mohd Ezwan B Mahadan hereby certify that the work entitled, Automtic ELCB Switching was prepared by the above name students and was submitted to the Faculty Of Electrical Engineering UiTM Cawangan Johor, Kampus Pasir Gudang as a full fulfillment for the conferment of Diploma Of Electrical Engineering (Electronic) and the aforementioned work, to the best of my knowledge, is the said student's work.

Supervisor signature: Date: 17/3/2015

ABSTRACT

An Earth Leakage Circuit Breaker (ELCB) is an electrical device that disconnects protected circuit whenever it detects unbalance current between the phase's conductor and the neutral conductor. Such an unbalance is sometimes caused by current leakage through the body of a person who is grounded when accidentally touching any active current of the circuit. A lethal shock can result from these conditions. ELCB are designed to disconnect this fault fast enough to prevent the harm caused by such shocks.

Apparently, there is no one had commercial the Earth Leakage Circuit Breaker (ELCB) with auto switching features in the market. The current ELCB that available in the market is a manual type and cannot differentiate between temporary disturbances and permanent faults. Its means that, if a disturbance or fault occurs on the protected area (house or shop), the protection system will force ELCB to trip. One of the drawbacks of the common ELCB is that, it's can't turn on the power supply back to the normal operation condition although only a short disturbance occurs. Such disturbance is lightning strike on the transmission line in the distribution site near to the protected area. To turn the power back to normal operation, consumers need to do that manually.

In order to solve that problem, Automatic ELCB Switching had been developed. This thesis presents the development of the ELCB system. This device was designed to differentiate between permanent fault and short disturbances (lightning).