**Abstract**

Lightning is one type of transient faults that usually cause the circuit breaker in the distribution board trip due to overload current detection. The instant tripping condition in the circuit breakers clears the fault in the system. Unfortunately most circuit breakers system is manually operated. The power line will be effectively re-energized after the clearing fault process is finished. Auto-reclose circuit is used on the transmission line to carry out the duty of supplying quality electrical power to customers. In this project, an automatic reclose circuit breaker for low voltage usage is designed. The product description is the Auto Reclose Circuit Breaker (ARCB) will trip if the current sensor detects high current which exceeds the rated current for the miniature circuit breaker (MCB) used. Then the fault condition will be cleared automatically and return the power line to normal condition. The Global System for Mobile Communication (GSM) system will send SMS to the person in charge if the tripping occurs. If the over current occurs in three times, the system will fully trip (open circuit) and at the same time will send an SMS to the person in charge. In this project a 1 A is set as the rated current and any current exceeding a 1 A will cause the system to trip or interrupted. This system also provides an additional notification for user such as the emergency light and warning system.

Keywords: Miniature circuit breaker; ARCB; microcontroller; Global System for Mobile Communication (GSM).

PACS: 07.50.-e

**Block Diagram**

****