ABSTRAC

Based on data from Badan Pengkajian dan Penerapan Teknologi (BPPT), the need for electricity consumption in Indonesia increased with average of 6.2 by year in 2000 – 2012. Therefore, the increase in the supply of electrical energy capacity must also be followed by increased reliability the electric power. It is necessary to monitor condition of the electricity network, so that when a problem occurs can be tackled immediately.

Nowadays, PLN use relays as a transformer safety. Therefore, PLN know transformer damage after receiving reports from the public. This research will creates a monitoring system of electrical energy network based on telemetri system with arduino uno, optocoupler sensor, modem FSK IC TCM3105, and handy talkie so the monitoring process can be done in real-time and the handling of the problems will be faster. The results of this study will help the officers to monitoring the electrical energy network problems.

The results of research is able to monitor in real-time with a maximum delay of 1 second with working optimum distance range of less than 175m if without modification on a walkie talkie antenna. With a maximum delay of 1 second, make the maximum capacity of a remote terminal unit (RTU) in the scope of the monitoring is of 60 RTUs with alternate delivery method for each RTU.

Keyword: monitoring, electrical network, telemetri system, arduino uno