ABSTRACT

Currently, electricity is one of the most widely used energy sources of the many other energy sources by humans to meet their daily needs. In buildings that have high power such as campus buildings or large buildings in the industrial sector, three-phase currents are used. The process of calculating electrical power is carried out within a certain period of time, both daily and monthly. In the case obtained, several parties or agencies have difficulty calculating, analyzing usage and monitoring the quality and quantity of electricity in an environment with more than one building. The innovation needed to deal with this problem is to create a real-time monitoring system.

This final project designs a prototype for monitoring three-phase electricity and transmits monitoring data to the IoT platform and memory for display and storage. Data that is successfully forwarded to the IoT Platform will be monitored directly through a website that can be accessed on digital devices and monitoring data will be stored in memory if the system loses the internet network to forward data to the IoT Platform.

As a result of this final project, a 3-phase Power Meter monitoring system based on the Internet of Things (IoT) has succeeded in reading electricity parameter data from the Power Meter. Data that is successfully read by the IoT-based 3-phase Power Meter monitoring system such as voltage, current, active power, reactive power, apparent power, power factor, and frequency are automatically stored in memory with the average data size to record 1 measurement data containing 1 rows and 29 columns, which is 9,200 Bytes or 8.98 Kilobytes. The data that has been successfully forwarded to the IoT Platform is then displayed and stored on the website which is 100% successful in accordance with the Power Meter measurement data.

Keywords*: Power Meter*, Three Phase*, Microcontroller, Real-Time Clock, Communication Serial, Wi-Fi Communication, Internet of Things, Data Logger, Printed Circuit Board.*