DESIGN AND CONSTRUCTION OF 1 PHASE ELECTRICITY USE MONITORING EQUIPMENT IN A BUILDING BASED ON NodeMCU 8266

Fatchi Usman Saputra
Electrical Engineering Study Program, Faculty of Science and Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : fatchi.usman@gmail.com

ABSTRACT

The development of technology in the field of electronics is currently very fast. Electrical energy plays an important role in advancing the community's economy, many appliances require electrical energy to operate, both on a household scale and on an industrial scale. The amount of electricity consumption every day, every week or every month also needs to be known by the owner in order to determine steps to make savings in electricity consumption so that it can reduce the cost of electricity bills and to maintain the availability of electrical energy. However, there are very few measuring tools that can monitor in real time. To meet the needs above, it is necessary to create a monitoring system for the amount of electricity that includes power, voltage, and current consumption of electrical energy which is carried out in real time. In this study, a tool will be made according to the owner's needs to make it easier for the owner to monitor the current, voltage and electrical power data used, the monitoring process is carried out using an application installed on a smartphone, this application will display the data read by the PZEM sensor. 004t to read the current, voltage and power values and then sent to the application page on the smartphone. Based on the tests that have been carried out, the accuracy and precision values from the current sensor readings are 99.91% and 99.87%, then the accuracy and precision values from the voltage sensor readings are 99.94% and 99.64%, as well as the accuracy value. and the precision obtained from the power sensor readings is 98.98% and 98.88%.

Keywords*: Electrical energy, Real Time, Current, Voltage, Monitoring*