

ABSTRACT

Technological developments in the era of globalization from time to time are growing rapidly, for example, nowadays human life cannot be separated from electrical energy. In recent years, the energy crisis has been caused by the wastage of electricity consumption. The solution to overcome these problems is the implementation of an electrical energy monitoring system. With the implementation of monitoring, the public will better understand how much electricity consumption is used in a certain period of time so that there is no spike in electricity bills. This research has produced a prototype device that can monitor electrical energy using the PZEM-004T 10A sensor in real time using the GSM network on the Antares platform. This study resulted in the average percentage error of the PZEM-004T sensor readings for the power meter measuring instrument proving a very good value, where the average error obtained in the voltage parameter was 0.15%, while the error value obtained for the current parameter is 1.09%, the power parameter value is 0.83% and the power factor is 1.66%. The performance of the Quality of Service delay value on the GSM network according to the standard criteria issued by TIPHON, the average delay value generated by the network is categorized as very good delay. From all the tests that have been carried out by the researchers, the electrical energy monitoring system designed based on GSM communication using the HTTP protocol with the Antares platform can run well as it functions.

Keywords: *Electrical Energy, GSM, Sensor PZEM-004T, QoS, Protokol HTTP.*