

## ABSTRACT

Electrical energy has great benefits in sustaining human life today. Not only as a light at night, but the presence of electricity is also able to bring the development of information technology more rapidly. The use of electrical energy is measured through a KWh meter. To make it easier to know the use of electrical energy, a KWh meter monitoring system based on the Internet of Things (IoT) is made to make it easier to know the KWh value.

This system uses the NodeMCU to process the PZEM-004T sensor values. OLED oversees displaying data on voltage, current, power, and electrical energy values. This system is designed to determine the use of voltage, current, power, and electrical energy used. The value data is forwarded to the user through instant messaging communication media Whatsapp in the form of chat notifications.

The test results of the KWh meter monitoring system can run with the Availability value of 98,61% and Reliability of 98,59% from the predetermined scenario. The scenario of testing the KWh meter monitoring system and analysis of detection of the PZEM-004T sensor value shows that the voltage, current, power, and electrical energy values of the PZEM-004T sensor have values that are close to the multimeter measurement results. The biggest delay is 1,32 s during the day. The highest throughput reached 79,2 bps at night.

**Keywords :** Internet of Things, Monitoring KWh meter, NodeMCU, PZEM-004T, Instant Messaging.