MONITORING SYSTEM FOR 1 PHASE BASED ON PREPAID KWH METER IoT (Internet of Things)

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ABSTRACT

Internet of Things (IoT) is a new solution to problems where technology can connect a device to an internet network, the use of Internet of Things (IoT) can facilitate various areas of need ranging from health, transportation, agriculture, security and others. Previously, research had been carried out related to monitoring electrical energy consumption using the PZEM-004T sensor as an electric current sensor and using a web platform to display the data. The 1-phase prepaid kWh meter remaining credit monitoring system which can be done remotely or remotely based on the internet of things is monitored in real time using the blynk application. This system is designed using an ESP8266 microcontroller, PZEM-004T, 20x4 LCD, push button. Tests were carried out comparing the analysis of measuring instruments and sensors for 2 days, there was an average percentage error for voltage of 0,85%, current of 1,03 %, power of 0,115 % and energy of 0,26 %. This device has a low error rate and is very suitable for use in controlling electrical energy usage and remaining prepaid kWh meter credit. However, if you want to get maximum results, testing can be done over a longer period of time. Based on the results of testing alarms and notifications of remaining credit of less than 5 kWh on the blynk application, 100% accuracy was obtained.

Keywords: *Internet of Things (IoT), PZEM-004T, mikrokontroller ESP8266, electrical energy*