IOT-BASED ELECTRIC POWER CONTROL AND MONITORING SYSTEM IN THE SMART HOME SYSTEM

Irham Arif Ohorella
Program Studi Teknik Elektro, Fakultas Sains & Teknologi
Universitas Teknologi Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : irhamohorella@gmail.com

ABSTRACT

Electricity is a mandatory requirement for humans today. Electricity consumption in residential homes is usually widely used for several electronic equipment. However, in the use of electric power, the MCB safety trip often occurs due to the use of excessive electrical loads simultaneously. The Internet of Things-based electric power control and monitoring system can detect the use of electric current and control electric loads automatically and can reduce the occurrence of overloads during peak usage. In this study using the NodeMCU 8266 microcontroller as an Internet of Things (IoT) device which is controlled and monitored via the Blynk application, the HC-SR04 ultrasonic sensor acts as a water level in a water reservoir with a testing accuracy of 98.63%. PZEM-004T as a current sensor with a test accuracy of 99.73%. and voltage with a test accuracy of 99.90%. Based on testing, this tool can control the load automatically under conditions according to the system that has been made for prioritized loads so that the current flowing does not exceed 2 amperes so that the MCB does not trip.

Keywords: *Electric Power, Microcontroller, Internet of Things, Ultrasonic HC-SR04, PZEM-004T*