Sistem Monitoring, Kontrol Dan Proteksi Energi Listrik Di Kamar Kos Berbasis Mikrokontroler Dan Android

Agus Setiawan
Program Studi Teknik Elektro, Fakultas Sains & Teknologi
Universitas Teknologi Yogykarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail: aagus.setiawan.2008@gmail.com

ABSTRACT

At this time, the business of boarding house providers is increasing. Most electricity rates payment is still conventional, based on the electronic devices used. The payments always the same in every boarding house. It is very detrimental to boarding house users because of unfair payments and the lack of transparency in the electricity cost. Based on these problems, the authors designed a system that can monitor real-time electrical energy, control electrical energy and protect electrical energy from overcurrent electricity. This system of controlling and monitoring electrical energy can be done on an Android application installed on a smartphone or can be done on the hardware device. This tool uses a prepaid electricity system. In this study, the authors used the NODE MCU ESP8266 microcontroller as a control component integrated with the Firebase database and Android applications. The sensor used is the PZEM-004T V03 sensor module, the power breaker uses a relay that will cut off the power if there is an overcurrent, the power limit is exceeded, the remaining tokens run out and if the user turns off the relay via the android application or push button. Based on the tests that have been done, the average percentage error of voltage measurement in room one is 0.15%, in-room two is 0.59% while the average percentage error in current measurement in room one is 0.33%, in-room two by 0.66%.

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