

**Rancang Bangun Alat Monitoring Konsumsi Energi Listrik Rumah Tangga
Berbasis Mikrokontroler** (*Design of Household Electricity Energy Consumption
Monitoring Based On Microcontroller*)

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ABSTRACT

The use of electrical energy is an activity that cannot be separated from human life. Lack of monitoring of electrical energy used causes waste in the use of electrical energy. This research was conducted to overcome the problem. Household electrical consumption energy monitoring based on microcontroller is made using arduino mega, ZMPT101B voltage sensor, ACS71 current sensor, Zero Crossing Detector circuit as a cos phi sensor, 20x4 LCD, and SD Card module. Based on the tests performed, known that the measurement accuracy is quite accurate to the measuring instrument with an average error value of the current sensor is 1.20%, the average error value of the voltage sensor is 0.17%, and the average error value of the cos phi sensor is 5.31%, so that the monitoring tool made is suitable to be used as an effort to conserve energy.

Keywords: Monitoring Tool, Electrical Energy, Arduino Mega, Zero Crossing Detector, Energy Conservation.