

ABSTRACT

Electricity has become an important basic need for many people for dialy activities. Electrical power needs of each person is different depending on the amount of usage. But often times the power consumption in a building is not controlled, cause the cost of electricity tariffs to rise. This raises the bills are soaring, especially a place to stay while building or as known as a boarding house. Where electrical bill is borne by the residents of boarding houses with the same tuition fee payment rate. Sometimes it makes the user want to know the amount of power consumption. Therefore, in this Final Project created "Design and Implementation Microcontroler Based of Power Usage Monitoring Equipment".

Power monitoring system that can learn the use of electrical power used by a boarding house residents. This monitoring tool consists of blocks of sensors, microcontroller block, power supply block and the LCD blocks. Sensor block consists of current sensors and voltage sensors to detect the current and voltage passing through. The output of each internal ADC will go to the microcontroller, but it also entered into a phase detector circuit to get the value of \cos (phase difference) it. Blocks of data from the microcontroller to process the incoming quantities of sensor block. For power supply block serves to provide ration to the current sensor and microcontroller. While the LCD block is used to display the power which used.

The results of testing conducted start from measurement hardware blocks that block the sensors, microcontrollers, relays, power supply and power supply. The results of the test states that the device can work well. LCD that can display both the unused power to the load. Current sensor is used both for flow under 20 A. Power shown is active power to the units of Watt, with the formula $W = V.I.Cos \varphi.t$.

Keywords : watt power, current sensor, voltage sensor