

ANALYSIS AND DESIGN OF ARDUINO BASED COS PHI METER

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ABSTRACT

This system is designed using the Arduino Nano, HLW8012 power sensor and a display on a liquid crystal display (LCD) with an AC display meter. The purpose of this study is that residential users can use this tool to find out all the electrical power that can be used for the home. Cos phi meter is a tool that uses to determine the magnitude of the power factor (power factor). Because of the importance of the value of the power factor, a tool is needed to make the right measurements to determine the quality of the power so that it can increase the efficiency of electric power. The result of this design is a cos phi meter measuring instrument that can read the cos phi meter value for testing 4 loads. Analysis of the average data, obtained a voltage value of 211.63 volts, a current of 0.58 amperes, cos phi 0.69 PF and a power of 296 KWH on the LCD display and an average data analysis obtained a voltage of 225.25 volts, a current of 0.37 ampere, cos phi 0.84 PF and power 0.34 KWH on the AC display meter display.

Keywords: *Arduino Nano, HLW8012 Power Sensor, AC Display Meter.*