

ABSTRACT

As already set forth by the WHO (World Health Organization) and IDI (Indonesian Doctors' Association), high voltage electricity networks as High Voltage Transmission Line, Extra High Voltage Transmission Line, Ultra High Voltage Transmission Line emit magnetic and electric fields that could potentially lead to various disorders, among others to the blood system, cardiovascular system, nervous system and reproductive system. Based on the magnetic quality standards in the Minister of Health No. 261 / Menkes / SK / II / 1998 on Magnetic Field Radiation, states that the safe limit for human health for Magnetic Field = 5×10^{-4} mT at 24 hour exposure. In the presence of strong magnetic field measuring devices can help people to find safe distance if they live in areas electricity networks.

Purpose of making final project is to design and implement a strong magnetic field measuring devices by utilizing the winding selonoida to capture the magnetic field. The results of the design will be implemented by 8535 ATmega microcontroller to process the measurement data of the voltage generated by the solenoid winding and conditioned so that it can be processed in the microcontroller. Then the processing will be displayed to the LCD (Liquid Crystal Display) in the form of numerical figures with Tesla unit.

Magnetic field strength measuring devices that have been designed and implemented in this final project can measure magnetic field strength of 0.0451 to 13.2971 mTesla in electricity transmission line such as Medium Voltage Transmission Line and High Voltage Transmission Line. With an average accuracy level of $\pm 4.084073\%$ and an average of 98.47% precision rate. Data measured magnetic field signals to be processed and displayed on the LCD dimikrokontroller magnitude of the Tesla.

Key words: Magnetic Field, ATmega8535, Electricity Transmission Line