Design and Analysis Module Trainer Kit Human Machine Interface (HMI) Using Nextion 3,5 Based on Arduino Uno

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ABSTRACT

The industry that continues to develop today is influenced by various factors. One of the most influential factors is technological progress. This progress is characterized by automatically controlling industrial equipment work systems. Arduino functions as the main control which is used to store programming data to control the work of other supporting devices. HMI functions to control and show status, whether done manually or presented with real time computer visualization. Tests carried out include display, monitoring and control. Sensor testing was carried out using an Arduino Uno with an input voltage of 5V to 12 V. Analysis of the current and voltage error of the PZEM-004T sensor, namely the current error value was 0.17% and the voltage error value was 0.64%. Analysis of the ultrasonic sensor, the error comparison value in cm is 0.84% and the inch comparison value is 3.05%. The average analysis value of the servo motor comparison error is 1.35%, and the average error value from testing the DHT 22 temperature sensor is 0.73%.