PROTOTYPE DESIGN OF POINT OF INTERFERENCE DETECTION SYSTEM IN MICROCONTROLLER-BASED ELECTRICAL INSTALLATION NETWORK

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ABSTRACT

The design of a fault point detection system prototype on a microcontroller-based home electrical installation network, is a current detector, active power and energy used at the load point of the electrical installation using PZEM-004t then displayed on blynk. The research steps are problem identification and literature study. From the results of manufacture, the authors perform system testing and system analysis. After the results of the analysis are in accordance with the research objectives, the final step of this research is to draw conclusions from the research results and continue with writing a research report. The author obtains accurate data on the measurement of the PZEM-004T 1 Ampere sensor when the system has no load, a system with 1 load in the form of a lamp and 1 load in the form of an iron. The conditions on each load relay are Relay 1 ON and Relay 2 ON. As well as obtaining data on the accuracy of measuring the PZEM-004T 1 Ampere sensor when the system is not loaded, a system with 1 load in the form of a lamp and 1 load in the form of an iron. . The conditions on each load relay are Relay 1 OFF and Relay 2 ON. From the process of testing and measuring the current and voltage sensors, the accuracy of reading the current sensor is 99.80% and the voltage is 99.80% for the current limit condition of 1 Ampere. And the accuracy of reading the current sensor is 100% and the voltage is 99.90% for the current limit condition of 1 Ampere. With an average reading difference of + 1 Volt, the sensor reading accuracy for the current limit condition is 1 and the current limit condition is 1 Amperes.

Keywords: Design and build of a fault point detection system prototype on a microcontroller-based home electrical installation network, Blynk, PZEM-004t, Relay.