ABSTRACT

Public Street Lighting (PSL) is an important facility to assist community activities, especially at night. The management and monitoring of PSLs in various region were still inefective and inefficient, causing problems such as increased energy consumption and time for repairing damaged lamps. Technological developments lead to the use of an Internet of Things system that is carried out remotely and in real time so that it can save time and effort in monitoring lights. Therefore, a Research was conducted that aims to create a system model that can monitor the condition of the lights remotely. A model of PSL lamp monitoring system was created consisting of an INA219 sensor to measure current and voltage, and a BH1750 sensor to measure the illuminance of the monitored lamp in a form of LED DC lamp. In addition, the use of the ESP32 microcontroller as a data processing device equipped with a chip so that it can connect to the wi-Fi connection for sending data into the MySQL database contained on the computer so that the data can be stored and displayed on the localhost web server contains less than optimal light information based on the measured parameters. System testing has been carried out by comparing the measured value of the sensor with the measured value on a standard tool such as multimeter and luxmeter and the results obtained are the average error value of each sensor for the two lamps that are used as objects, namely 1.24% and 1.64% for current sensors on a measured max 86.70 mA, 0 .60% and 1.48% for the voltage sensor on a measured max 12.81 V, and 2.11% and 3.25% for the illuminance sensor on a measured max 1571 lux. This value indicates the sensor can work well and can be used in the design of a remote light monitoring system model.

Keywords: Public Street Lighting (PSL), Internet of Things (IoT), INA219 sensor, BH1750 sensor, microcontroller, database.