

ABSTRACT

Portable emergency lamp gives an important role when the power outage. Portable emergency light that exists today already have an indicator light in the form of red light and green light. Red light indicates that the battery capacity lights will run out, while the green light indicates the battery capacity of the lamp is fully charged. However, the portable emergency lights do not have information about the percentage and the estimated time runs from the battery capacity indicator lights.

In this final project created a tool indicator shows the percentage and the estimated time of the battery is displayed via the LCD. System device works is the percentage and the estimated battery time is read by the sensor voltage and current sensors are then processed in the microcontroller which is then displayed via the LCD. Function keypad as the input voltage of maximum, minimum voltage, minimum and amperage from the battery. At the time of the LCD shows the lower limit of the percentage of the battery, the buzzer will give an alarm and activate a relay. Relay will be inactive if the LCD shows the percentage of the maximum voltage of the battery. So that the flow of PLN will be automatically disconnected. All systems of this indicator tool is controlled by a microcontroller with a Arduino Nano platform.

The results of this final project showed that the estimated time runs out of battery portable emergency light is affected by currents and large amperage marked on the battery specifications. Has performed measurements on two portable emergency lamp with the average - average error 0.225% on the percentage of voltage and 35% on the estimation of the time runs out.

Keywords: emergency light portable, microcontroller, Arduino Nano, current sensor module.