ABSTRACT

Infusion is one of the medical equipment that serves to provide a number of fluids into the body through a needle into a vein to replace fluids or food substances lost from the body. The use of manual infusion to determine the number of drops given to the patient and the calculation manually. The purpose of this research is to make an automatic infusion flow control device equipped with occlusion detection. This final project module consists of an Arduino Mega 2560, DC motor (stepper nema 17), optocoupler module, 4x4 keypad and TFT. Infusion drops are detected by the optocoupler sensor. The detection results will be processed by the microcontroller and send a DC motor command to move according to the settings entered. The unit of flow rate used in the module is ml/min. After measuring using an IDA calibration tool with the Fluke brand type IDA 4 plus on the occlusion parameter, the average time is 41 seconds and the results of the flow rate have the largest deviation of 0.15 ml/min at the time setting of 6 hours and the volume of 500. While the smallest deviation is 0.12 ml /min on setting time 4 hours and volume 500 ml. From the results of measurements that have been carried out this module is expected to help nurses to regulate the infusion and the results in the future this module can be developed again with the appearance of the flow rate results can be directly displayed without having to wait for the drops to stabilize.

Keyword : Infusion, Automatic, Optocoupler, DC Motor.