ABSTRACT

Medical devices must be periodically calibrated at least once a year. Infusion pumps and syringe pumps are part of medical equipment that must be calibrated. Calibration according to Permenkes No. 54 of 2015 is an outreach activity to determine the truth value of measuring instruments and / or measuring materials. The purpose of this study is to create an Infusion Device Analyzer (IDA) with flow rate or flow rate parameters. The contribution of this research is a tool that can calculate the flow rate value from the infusion pump and syringe pump. Water released by the infusion pump or syringe pump will be converted into droplets which are then detected by the sensor. This modul uses an infrared sensor and photodioda. The results obtained by the sensor will be processed by Arduino and displayed into a 16x2 Character Liquid Crystal Display (LCD) and can be stored on an SD Card so that it can be further analyzed. In setting the syringe pump flow rate of 100 m /h, an error value is 3.9, 50 ml/ h 0.02, 20 mL/ h0.378, 10 mL /h 0.048, and 5 mL /h 0.01. And for infusion pump with condition 1 is 0,09, condition 2 is 0,1, and conditian 3 is 0,26. The results show the average error of the syringe pump and infusion pump performance read by the module is 0.87 and 0,15. The results of this module have been able to calibrate the syringe pump and infusion pump so that it can be known whether the device is safe to use and safe to use for patients or not.

Key Word : Calibration, Flow Rate, Arduino