ABSTRACT

Medical devices that are used to enter a liquid into the patient's body continuously for a certain period of time using an infusion pump and syringe pump. It is important that the results of the infusion pump and syringe pump are the most accurate and precise flow rate and occlusion (pressure) parameters, to ensure that the correct calibration method is needed. Long-term use of medical devices can cause changes in accuracy. Medical devices must be periodically calibrated at least once a year. Calibration according to Permenkes No. 54 of 2015 is an information activity to determine the truth of the appointment value of measuring instruments and / or measuring materials. Therefore, the purpose of this study is to design an Infusion Device Analyzer with Occlusion parameters. Occlusion is a blockage of flow in the infusion pump and syringe pump. Occlusion limits set <20 Psi according to ECRI 416-0595. This tool uses a water pressure sensor SKU 237545. Liquid will enter the device and then there are 3 solenoid valves to make a simulation of resistance. When the sensor is pressured by a liquid, the sensor will detect the pressure and is processed by Arduino. The results will then be displayed on the liquid cristal 2x16 character display and can also be stored on the SD Card. At the highest flow rate setting of 100mL / h, an average value of 12,934 Psi is obtained. The result of the module is the Occlusion value in the Psi unit which can calibrate the infusion pump and syringe pump so that the feasibility and safety of the device for administering fluids to the patient's body through veins can be seen.

Kata Kunci : Calibration, Occlusion, Arduino