

ABSTRACT

Flowrate calibration on the infusion pump and syringe pump is very necessary to measure the flow of the device which is then compared with the national standard for measuring units and the accuracy of the output results by setting the tool. The purpose of this research is to design an Infusion Device Analyzer to display flowrate graph parameters. The contribution of this research is that the system can display flowrate graphs against time in real time along with their numerical quantities using Parallax Data Acquisitions (PLX DAQ), the data sent using the HC-05 bluetooth module. This study can calculate the flow rate of the infusion pump and syringe pump by reading the liquid in the form of droplets and then detecting the infrared sensor and photodiode. The results obtained by the Arduino Nano sensor and sent via Bluetooth to a Personal Computer (PC) are displayed using Parallax Data Acquisitions (PLX DAQ). The data flow rate is in the form of plotting graphs and numerical averages. The measurement results show that the average error in the performance of the syringe pump and infusion pump after being compared with the IDA 4 Plus Fluke is 3.5% and 12.23%, respectively. The results showed that the improper placement of the sensor could affect the results, which could not read the difference when a drop occurred or did not occur. The results of this study can be implemented on conventional IDA to make it easier for users to retrieve data when reading is stable.

Kata Kunci : Calibration, Flow Rate, PLX DAQ