ABSTRACT

Both the syringe pump and the infusion pump are used to administer fluids or medications into a blood vessel in a steady, timed stream. Infusion pumps and syringe pumps often have issues with obstruction or occlusion. Because of a blockage in the infusion system, the incoming medication fluid does not continuously flow. The ECRI-recommended upper limit for occlusion is 20 PSI. Calibration must be performed at least once a year to assure accuracy.

The goal of this study is to determine how well the pressure sensor works for measuring occlusion on the Infusion Device Analyzer's second channel of visual display. This investigation has dual channels, allowing for simultaneous tool calibration. This module's design incorporates a Water Pressure Sensor for occlusion measurement and a solenoid valve for pressure modeling. When pressure is applied to the sensor, data is sent to an Arduino for analysis. After the pressure readings have been taken, they are graphed and shown in numerical form on a 7-inch TFT LCD before being saved to an SD card.

Keywords : Calibration, Occlusion, Syringepump, Infusepump

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