

ABSTRAK

Alat ukur konsentrasi oksigen dan laju ukur aliran oksigen merupakan alat yang di gunakan untuk mengukur presentase kadar oxygen dan laju aliran oksigen pada CPAP. Alat ini menggunakan sensor OCS-03F, dengan pemroses arduino NANO kemudian di tampilkan pada LCD karakter 2X16. Pengukuran presentase kadar oxygen dan laju aliran oxygen dilakukan pada CPAP sebanyak 5 kali pengukuran. Penelitian dan pembuatan modul ini menggunakan metode Pre-eksperimental dengan rancangan After Only Design yaitu meneliti "Oxygen Analyzer" yang hasil pengukurannya dibandingkan dengan alat yang tertelusur untuk mendapatkan nilai akurasi yang tinggi.

Berdasarkan hasil pengukuran pada alat CPAP di Rumah Sakit Dr. Soetomo Surabaya dengan setingan kadar oksigen 21%, 30%, 40%, 50% 60%, 70%, 80%, 90%, 100% sedangkan setingan laju ukur oksigen 1L/m, 2L/m, 3L/m, 4L/m, 5L/m, 6L/m, 7L/m, 8L/m, 9L/m 10L/m. Masing – masing pengukuran dilakukan sebanyak 5 kali. Untuk pengukuran kadar oksigen di dapat nilai eror terbesar 5% dan terkecil -0,06% sedangkan untuk pengukuran laju aliran oksigen di dapat nilai eror terbesar 4% dan terkecil 0%.

Berdasarkan hasil analisis dari pembuatan alat ukur kadar oksigen dan laju aliran oksigen dapat disimpulkan bahwa pembuatan Alat ukur konsentrasi oksigen dan laju ukur aliran oksigen dapat bekerja dengan baik.

Kata Kunci: *Kadar Oksigen, Laju Aliran Oksigen, Sensor OCS-03F, CPAP*

ABSTRACT

Measuring oxygen concentration and measuring the flow of oxygen is a tool used to measure the percentage of oxygen content and oxygen flow rate in CPAP. This tool uses the OCS-03F sensor, with Arduino NANO processors then displayed on the 2X16 character LCD. Measuring the percentage of oxygen content and oxygen flow rate is carried out on CPAP for 5 measurements. The research and manufacture of this module uses the Pre-experimental method with the After Only Design design, which examines the "Oxygen Analyzer", which results in measurements compared to the traced tools to obtain high accuracy values.

Based on the results of measurements on the CPAP tool at Dr. Soetomo Surabaya Hospital with oxygen level settings of 21%, 30%, 40%, 50% 60%, 70%, 80%, 90%, 100% while setting the oxygen measurement rate 1L/m, 2L/m, 3L/m, 4L/m, 5L/m, 6L/m, 7L//m, 8L/m, 9L/m 10L/m. Each measurement was carried out 5 times. For the measurement of oxygen levels the biggest error value is 5% and the smallest -0,06% while for the measurement of oxygen flow rate the biggest error value is 4% and the smallest is 0%.

Based on the results of the analysis of the manufacture of oxygen levels and oxygen flow rates, it can be concluded that the manufacture of oxygen concentration measuring instruments and oxygen flow rate can work well.

Keywords: Oxygen Concentrate, Oxygen Flow Rate, OCS-03F Sensor, CPAP