

ABSTRACT

The use of oxygen that occurs in hospitals is currently lacking in providing transparency to the patients. The amount of tariff so far is only through manual recording of the duration of the use of oxygen gas, not based on the volume of its use. Based on the oxygen usage volume detector that has been made before the output is only limited to per minute, it has not been able to detect usage per second. In addition, the previous device was only for adults, and was not connected to a PC and there was no central monitoring from the nurse's room. The purpose of this study is to make a central monitoring detection of the volume of oxygen gas usage in real terms appearing on a PC. The researcher used a more sensitive sensor with a minimum reading of 1 L / min so that it can be used for pediatric and adult patients. Besides that, it can also detect usage output per second, so that the tariff and oxygen consumption volume released are more linear and transparent and accurate. The design of this study uses "After Only Design" and that acts as the control of PT. SMS. Calculation of the total volume and tariff charges in this module uses the equation function formula $y = 0.0023x^2 + 0.2515x + 0.6122$ which is controlled by the ATMega32 microcontroller. Data analysis results on the flow rate settings of 1L / min, 4L / min, 8L / min, 10L / min and 15L / min, there are relative errors of 4.34% and in modules of 5.74%, so the difference is 1.40%. This means that this tool is declared feasible because it is still within the permitted tolerance limit (10%).

Keywords: *Tariff Charges, Oxygen Gas, Microcontroller, ATMega32*