ABSTRACT

Breathing is an events inhale air from the outside that contains oxygen (O2) and exhale air that containing of carbon dioxide (CO2) as a residue from oxidation to the outside of the body. In taking a breath there are two ways, chest breathing and abdominal breathing. Respiration is an important physiological parameter that helps to provide information about the patient's health status.

The respiratory rate meter is a device used to calculate the respiratory rate by counting the number of breaths for 1 minute. Usually, this measurement for diagnose a disease. From the results of measurements of respiratory frequency there are 3 levels, for the amount of normal breathing called eupnea, while the number of respirations that exceed the average is called tachypnea and lower than average is called bradypnea. In this study the measurement of respiratory rate is performed by the way the patient puts a piezoelectric sensor on the chest with belt then the sensor will change the chest cavity pressure to voltage and then processed by Arduino and displayed to a PC with Delphi.

Based on the results obtained an average amplitude for the left position is 1,65V, the middle position is 1,24V and the right position is 1,68V. The error value for each measurement is 4,4% for left position, 4,8% for middle position and 4,3% for right position. It can be concluded that to obtain the best measurement, the sensor must be placed in the position of the right or left chest cavity. This device is in a worthy condition to use and it can still be developed and research further.

Kata Kunci : Piezoelectric Sensor, Respiration Rate