

ABSTRACT

Incubator analyzer is a device designed to verify the operation and environmental conditions of babies incubator which can record parameters such as air flow, noise, temperature, and the relative humidity with feasibility level of leakage outside temperature $\pm 1 \text{ }^\circ\text{C}$, humidity $> 70\%$, the air flow rate $< 0.35 \text{ m/s}$, and the noise level in the incubator $< 60 \text{ dBA}$

Before, Incubator analyzer 3 parameters have been designed by Herlina Candra Putri (2006) and Rohmantus Sholihah (2006), then Aljaziroh Jannatul Maghfiroh (2014) and Ghafur Slamet improved (2014). Both of them are not use air flow sensor. Based of that, writer have improved Incubator Analyzer modul with air flow sensor and with error measurement and deviation standard.

Module of "Incubator Analyzer Portabel Berbasis ATMEGA32" which created by writer use temeperature sensor LM35 as temperature sensor T1, T2, T3, and T4. Air flow sensor module used resistor 10 ohm $\frac{1}{4}$ watt, temperature sensor LM35, and T1. Based of the test and measurement error obtained at the temperature sensor module for : 0.51% for sensor T1, 0.28% for sensor T2, 0.90% for sensor T3, and 0.54% for sensor T4. Air flow sensor module only can detect air flow for 0-1.2 m/s and it only can work at room temperature 33-37 $^\circ\text{C}$, humidity 60-80% RH with sensor readings +/-3 minutes response. The best reading of air flow sensor is when temperature inside T1 in +/- (33.24 $^\circ\text{C}$, 34.27 $^\circ\text{C}$, 35.25 $^\circ\text{C}$, 36.24 $^\circ\text{C}$ and 37.23 $^\circ\text{C}$) with averages data error on the air flow sensor module: 5.25 %.

Keyword : Temperature, Air Flow, Incubator Analyzer