

**INCUBATOR ANALYZER
BERBASIS ARDUINO
PARAMETER SUHU**

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ABSTRAK

Inkubator bayi merupakan tempat untuk menjaga kestabilan suhu tubuh bayi prematur. Suhu merupakan parameter penting yang harus dijaga kestabilan suhunya dan dipantau sesuai dengan standar yang ditetapkan BPFK (Balai Pengamanan Fasilitas Kesehatan) maka diperlukan pengkalibrasian. Oleh karena itu Penulis bermaksud membuat alat kalibrasi inkubator bayi parameter suhu dengan 4 titik pengukuran. Sensor utama dari *incubator analyzer* parameter suhu yaitu LM35 sebagai sensor suhu T1, T2, T3, dan T4. *Range* suhu yang dapat dideteksi antara 20.00° C - 50.00° C. Suhu dalam ruang inkubator bayi, diharuskan berada pada suhu 35.5° C - 37° C. Hasil pengujian dilakukan didalam inkubator bayi mulai dari suhu 32° C - 37° C. Pengambilan data nilai *test point* pada setiap titik suhu, perbandingan suhu antara modul TA dengan alat pembanding (*fluke temperature meter*) dan pengkalibrasian inkubator bayi. Penguatan *output* sensor suhu LM35 dilakukan sebesar ± 5 kali penguatan. Nilai *error* terbesar didapat pada sensor suhu T4 yaitu $\pm 1.09762824\%$ dan pada suhu 37° C dan nilai *error* terkecil didapat pada sensor suhu T1 yaitu 0.005633803% dan pada suhu 35° C. Pengukuran kalibrasi suhu inkubator bayi untuk selisih yang dihasilkan tampilan inkubator bayi dengan *Temperature Meter* $\pm 1^\circ$ C pada setting suhu 32° C, 33° C dan 34° C.

Kata Kunci: Inkubator Bayi, *Incubator Analyzer*, Suhu

**ADUINO-BASED
INCUBATOR ANALYZER
TEMPERATURE PARAMETER**

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ABSTRACT

Baby incubator is an equipment to keep the temperature stability of premature babies. Temperature is an important parameter. Therefore, its stability should be monitored based on the standard required by BPFK (Health Facilities Safety Center) hence the need for calibration. The writer aims to make a calibration tool for baby incubator temperature parameter with four measurement spots. The main sensor from the temperature parameter of incubator analyzer is LM35 as temperature sensor of T1, T2, T3, and T4. The range of temperature that can be detected is between 20.00° C – 50.00° C. The temperature inside the baby incubator has to be between 35.5° C – 37° C. The test was conducted in the baby incubator starting from 32° C – 37° C. The data was collected from the test point value on each temperature spot, the temperature comparison between TA modules used fluke temperature meter as comparison tool and the calibration of baby incubator. The output power for LM35 temperature sensor was done as much as ± 5 times. The biggest error value was found on T4 temperature sensor at ± 1.09762824% and at the temperature of 37° C, while the smallest error value was found on T1 temperature sensor at ± 0.005633803% at the temperature of 35° C. The measurement of baby incubator temperature calibration shows the margin of baby incubator temperature meter ± 1° C at the temperature setting of 32° C, 33° C, and 34° C.

Keywords: Baby Incubator, Incubator Analyzer, Temperature