ABSTRACT

Dry sterilizer or drying sterilizer is a tool used for sterilization or cleaning using dry hot air. A dry sterilizer is one of the medical devices that must be measured, checked regularly, and calibrated according to standards before use or after use at certain intervals. The purpose of developing this tool is by adding 9 thermocouple sensors, as well as data storage and RTC for time markers on the recording results. The placement of this sensor is adjusted to the sterilizer calibration method based on the IEC 60068-3-5 standard. Placement of the thermocouple sensor according to IEC 60068-3-5 where the temperature of the sterilizer will be read by the thermocouple, and fed to the Arduino. This study uses the Arduino mega system as data processing from 9 thermocouple sensors through a max 6675 circuit and displayed on the LCD. The data can be stored on the memory card. The instrument in this study is suitable for temperature testing because the results of the comparison with the standard calibrator have the largest difference of 0.8 °C. From the results of the measurement test when the sterilizer is empty and when the sterilizer is filled with contents, it is obtained the results of the total variation of the temperature gradient, variation in space, temperature fluctuation. The highest total variation value from this test is 3.5 °C. These results indicate that there is no significant impact if the dry heat sterilizer test is carried out under load or empty conditions.

Key words : Sterilizer, Thermocouple, IEC 60068-3-5, Total variation