

ABSTRACT

TDP stands for "Teding Diancibo Pu" means special electromagnetic spectrum, TDP lamp is one of fisiotherapy equipment. This aircraft includes equipment that uses infrared as a therapy for rheumatoid arthritis or an inflammation of one or more joints of the body which feel the heat energy that penetrates the skin.

Previously these device were made only using the digital clock adjustment so the author took the initiative to develop it with microcontroller timer. In addition, the author add the skin sensor to make it easier and more effective monitoring of use.

Fisiotherapy TDP Lamp device is equipped with a heat-setting lighting there are low with 40 ° C, medium with 43 ° C, and high with 45 ° C. The sensor skin temperature, based on microcontroller AT89S51, using LM35 as temperature sensor, so that we can know the temperature that has been sensed and can be monitored and stabilize the heat that emitted by lamp in order to appropriate with desired heat.

Based on the results of testing by measuring as much as 10 times at each temperature setting by using a thermometer as a comparison, the value of the error at 40 ° C is 0.2%, at 43 ° C is 0.16% and at 45 ° C is 0.15%, so the value is not much different from the comparison value. And based on timer measurements obtained error value as 0.02%.

After conducting the literature study, planning, experimentation, manufacture modules, testing the device, and data collection, in general it can be concluded that the device "Fisiotherapy TDP Lamp device" can be used.

Keywords: Fisiotherapy, heat lamps, timer