ABSTRACT

MEASUREMENT OF SOIL TEMPERATURE USING DS18B20 AND ITS RESISTIVITY USING WENNER'S CONFIGURATION OF GEOELECTRIC METHOD

By

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The important characteristics of soil are temperature and resistivity. This research measured the soil temperature using DS18B20 sensor. The potential difference has been measured by the geoelectric using Wenner configuration and the current has been measured by the digital multimeter. The measurement is controlled by Arduino Uno. This type of metal is steel. The distance of each metal is 10 cm. The average value of the sand temperature was 28.7^{0}C, garden soil temperature was 27.31^{0}C, and soil temperature at the Department of Physics was 26.2^{0}C. Resistivity sand was 2422.748 Ωm, garden soil resistivity was 22.81712 Ωm, and soil resistivity at the Department of Physics was 16.3033 Ωm. The results showed that if the temperature increases, so the value increases resistivity.

Key words: *Sensor DS18B20, Wenner configuration, soil temperature, soil resistivity*