

ABSTRACT

Capacitive sensor is one of method to measure the electrical amount of an object based on conversion in capacitance value. The capacitive sensor is designed using a copper plate that is installed in a plot so that it can facilitate measurement therefore when making measurements in place it is more practical to simply place the electrode on top of the object. To design a plot plate sensor, the determination of the plot plate capacitive sensor parameters is experimental to obtain optimal results on the plot plate capacitive sensor parameters. The plot plate parameters used are the area and distance between electrodes. The capacitive sensor designed will be connected to the LCR meter 9184. Based on the research that has been done the optimal results on the plate plate sensor parameters are in the form of the width and distance of the electrodes is 0.5 cm and 100 cm². Based on testing the plot plate capacitive sensor has been able to detect the presence or absence of metal and wood in a test object and can discriminate variations types of objects, hance capacitance value is relatively small. In the objectless test with a wide electrode used 64 cm², a capacitance value 7,80 pF was obtained. Whereas on examination of the distance of an iron object with 1 cm electrode sensor at 10.38 pF, 2 cm at 8.00 pF, 3 cm at 7.90. in copper objects with a 1 cm distance electrode at 11.24 pF, 3 cm at 8.00 pF.on concrete objects with a 1 cm distance electrode at 11.34 pF, 2 cm at 8.30 pF, 3 cm at 8.00 pF. On a wooden object with an electric distance of 1 cm at 11.10 pf, 2 cm at 8.10 pF and 3 cm at 8.00 pF.

Kata Kunci: *capacitance sensor, plate field-capacitive sensor, LCR meter 9184*