

ABSTRACT

Eddy Current Testing (ECT) is one type of magnetic method, where ECT is widely used for NDT evaluation on conductive materials such as metal plates. In Eddy Current Testing to scan a test object requires a sensor. The sensor used to detect the defect is the coil. The coil used consists of a transmitter coil and a receiver coil. In this study, 2D scanning mechanism uses X-axis and Y-axis. The X-axis and Y-axis are used to determine the state of the scanner coil against the test object. However, this research will focus on determining the location of the sensor, namely the transmitter coil and receiver coil. The author is currently developing a new method, namely by using a hall effect sensor using the center of gravity of the magnetic field to determine the X-axis and Y-axis coordinates to determine the location of the coil used in ECT. Based on the test using a coil with a current of 0.5 A placed on a 4 cm x 4 cm plane, the results at the x-coordinate the mean error is 0.08 and the maximum error is 0.44. Whereas for the y-coordinate the average error is 0.23 and the maximum error is 1. Then the test on the coil with a current of 1 A is placed on a 4 cm x 4 cm plane. The result is that on the x-coordinate the average error is 0.07 and the error the maximum is 0.33. Whereas for the y-coordinate the average error is 0.1 and the maximum error is 0.32. Then the test uses a coil with a current of 1 A placed in a 2 cm x 2 cm plane. The result is that at the x-coordinate the mean error is 0.12 and the maximum error is 0.19. Whereas for the y-coordinate the average error is 0.12 and the maximum error is 0.19. Based on the test using a coil with a current of 2.5 A, it is placed on a 4 cm x 4 cm plane, the result, at the x-coordinate the average error is 0.09 and the maximum error is 0.28. Whereas for the y-coordinate the average error is 0.09 and the maximum error is 0.09.

Keywords: *NDT, ECT, Coil, Hall Effect Sensor.*