

***Measurement of Contactless Water Level Sensor with Electrode Distance Variations Using Linear Regression Method***

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**ABSTRACT**

*Water resource management has become crucial in the modern era, especially in the food industry, which requires accurate water level measurement. The capacitive sensor FDC1004 is used to measure water levels without contact. This study tests the effectiveness of the contactless sensor with electrode distances of 3 cm, 5 cm, and 7 cm using the linear regression method. The results show that the 3 cm electrode distance has the highest accuracy, with an R value of 0.995 and an R Square of 98.9%. The 5 cm distance is quite effective, with an R value of 0.988 and an R Square of 97.6%. The 7 cm distance shows the lowest effectiveness, with an R value of 0.961 and an R Square of 9.23%. This study concludes that the 3 cm electrode distance is the most optimal for measuring water levels using the capacitive sensor FDC1004.*

***Keywords: Capacitive Sensor, FDC1004, Liquid Level Monitoring, Simple Linear Regression***