

Study of Harmonics Estimation on Analog kWh Meter Using Fast Fourier Transform Method

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Abstract : PLN used the kWh meter to determine the amount of energy consumed by the household customers. High precision of kWh meter is needed in order to give accuracy results as the accuracy can be decreased due to the presence of harmonic. In this study, an estimation of active power consumed was developed. Based on the first year study results, the largest deviation due to harmonics can reach up to 9.8% in 2200VA and 12.29% in 3500VA with kWh meter analog. In the second year of study, deviation of digital customer meter reaches 2.01% and analog meter up to 9.45% for 3500VA household customers. The aim of this research is to produce an estimation system to calculate the total energy consumed by household customer using analog meter so the losses due to irregularities PLN recording of energy consumption based on the measurement used Analog kWh-meter installed is avoided.

Keywords : harmonics estimation, harmonic distortion, kWh meters analog and digital, THD, household customers

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