

Simulation and Analytical Investigation of Different Combination of Single Phase Power Transformers

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Abstract : In this paper, the equivalent circuit of the ideal single-phase power transformer with its appropriate voltage current measurement was presented. The calculated values of the voltages and currents of the different connections single phase normal transformer and the results of the simulation process are compared. As it can be seen, the calculated results are the same as the simulated results. This paper includes eight possible different transformer connections. Depending on the desired voltage level, step-down and step-up application transformer is considered. Modelling and analysis of a system consisting of an equivalent source, transformer (primary and secondary), and loads are performed to investigate the combinations. The obtained values are simulated in PSpice environment and then how the currents, voltages and phase angle are distributed between them is explained based on calculation.

Keywords : transformer, simulation, equivalent model, parallel series combinations

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