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THE FORMATION OF THE OUTPUT VOLTAGE OF THE THREE-PHASE POWER SUPPLY UNIT IN THE SLIDING MODE

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Abstract

The object of study is the three-phase sinusoidal voltage source, which is composed of a frequency converter with an output LC-filter and a three-phase output transformer. Synthesis of control law by forcing a sliding mode to minimize the impact of disturbances in the load on the output voltage of the source for the ideal case has been made. The conditions of sliding mode existence have been obtained. The restrictions that affect the technical feasibility of the synthesized control law, which are characteristic of non-ideal cases have been investigated. Taking into account these restrictions, corrected expression that describes the sliding surface has been obtained. The spectral distribution of the output voltage has been studied. The simulation results are presented. References 4, figure 1.

Key words: frequency converter, output LC-filter, three-phase transformer, sliding mode, output voltage form.

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