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COMPARATIVE ANALYSIS OF LINEAR PULSE ELECTROMECHANICAL CONVERTERS ELECTROMAGNETIC AND INDUCTION TYPES

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Abstract

The comparative analysis of the with a ferromagnetic screen covering the inductor, which is excited by capacitive energy storage aperiodic pulse, is made. The mathematical model of LPEC that takes into account spatially distributed and time-varying interconnected electromagnetic, mechanical and thermal processes is developed. It is shown that the electromechanical processes in the LPEC of electromagnetic type is more slowly at a smaller magnitude of the current in the inductor, but provide more impulse of force. LPEC of induction type develops greater speed of the actuator at lower stray magnetic fields and higher efficiency.
References 6, figures 2.

Key words: linear pulse electromechanical converter of electromagnetic and induction types, ferromagnetic screen.

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