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LIMITATION OF APERIODIC TRANSIENT DURATION IN CAPACITORS CIRCUITS OF TWO-CHANNEL ELECTRICAL DISCHARGE INSTALLATIONS

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Abstract

The mathematical modeling of pulse periodic transients in the circuits of capacitors of two-channel semiconductor electrical discharge installations is performed. The conditions for limiting the duration of the aperiodic transient processes of the discharge of capacitors of such

installation through the electro-spark load, the resistance of which can vary from one discharge to another one, are determined. It is shown that the duration of the aperiodic discharge of the capacitors in two-channel installations depends on the frequency of spark discharge pulses in the load and this duration cannot exceed the duration of spark discharge pulses period. The limitation of the aperiodic discharges duration depends on the parameters of the discharge circuit and the duration of recovery of locking properties of the semiconductor (thyristor) switches. It is shown that reducing the duration of discharge currents in the load increases the frequency and stability of the pulsed modes in the load. References 12, figures 3.

Key words: aperiodic transients, capacitor, semiconductor switch, discharge, pulse current.

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