

Economical system for automatic adjustment of the power factor, with capacitor banks, in three-phase low-voltage installations

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The invention relates to an economical system for automatic regulation of the power factor with capacitor banks in three-phase low-voltage installations. The technical problem is the realization of an economical system of automatic regulation of the power factor, with capacitor banks, from three-phase low voltage installations, which uses a three-phase static electronic power relay common to all stages of capacitor banks. to improve the power factor in three-phase low-voltage installations. It consists of a current transformer (which measures current in a phase), a VAR-metric controller with microprocessor, two small capacity PLCs, a three-phase static electronic power relay, twelve electromagnetic contactors and six capacitor banks.

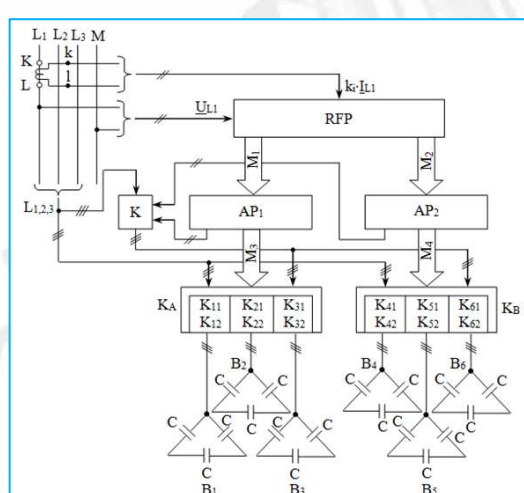


Fig.1. Block diagram of the economic system for automatic adjustment of the power factor

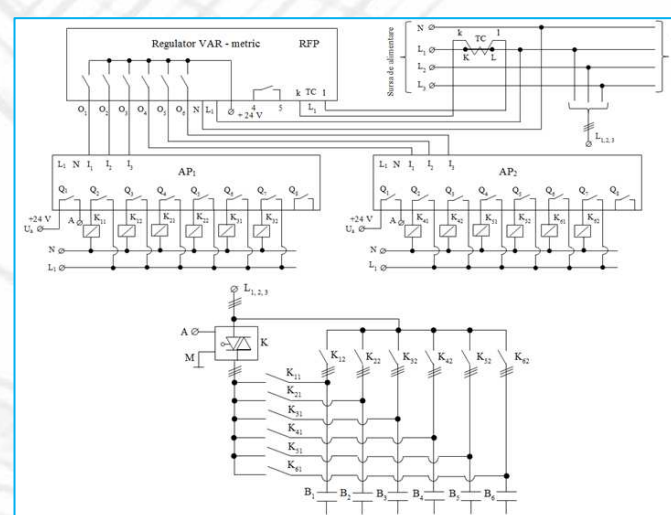


Fig.2. Wiring diagram of the economic system for automatic adjustment of the power factor

The advantages of the invention are the following: the currents at the connection of the capacitors are much diminished, from (20-50) xIn to In; switching is done at zero voltage; no electric discharge occurs at switching; high reliability; lower costs than when using a three-phase solid state relay for each capacitor bank; very high input/output isolation voltage; does not generate disturbing electromagnetic fields; superior service life compared to systems where the connection of capacitor banks is made with conventional contactors.

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