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MULTIFUNCTIONAL CONVERTER FOR SINGLE-PHASE COMBINED POWER SUPPLY SYSTEMS FOR LOCAL OBJECTS WITH A PHOTOVOLTAIC SOLAR BATTERY

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The paper deals with the single-phase converter for combined power supply systems with a built-in transformer and inverter for volt-add, that combines the function of a power active filter with the maintenance of a power factor close to unity when it is operating in parallel with a grid and also the operation in an autonomous mode and voltage stabilization of the load in the normally acceptable range of value. The choice of the circuit parameters is confirmed. It is proposed to use the variable structure of the converter control system with regulation of voltage at the input of a grid inverter in accordance with the value of a grid voltage and cut-off energy generation to the grid when its voltage is higher than the maximum acceptable value. The results of the system simulation are presented. References 4, figures 3.

Key words: combined power supply system, power active filter, photovoltaic solar battery, current controlled voltage source inverter, transformer and inverter for volt-add, autonomous mode, stabilization of voltage, simulation.

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