

DOI: <https://doi.org/10.15407/technd2020.03.030>

ENERGY EFFICIENT STRATEGIES OF POWER ACTIVE FILTRATION BASED ON OPTIMAL DECOMPOSITIONS OF LOAD CURRENTS AND CORRESPONDING POWER LOSSES

Journal	Tekhnichna elektrodynamika
Publisher	Institute of Electrodynamics National Academy of Science of Ukraine
ISSN	1607-7970 (print), 2218-1903 (online)
Issue	No 3, 2020 (May/June)
Pages	30 - 35

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Abstract

Optimal decompositions of load current vectors and the corresponding instantaneous and integral power losses of multiphase power supply systems based on the equations for determining the active current taking into account the ratio of resistive parameters in the transmission line are justified. The minimum values of instantaneous and integral power losses associated with the transfer of energy with a given value of active power are determined. Based

on the optimal decomposition of the load current vectors, four control strategies for the shunt active filter are constructed each of which provides an extreme value to one of the quality parameters. References 13.

Key words: shunt active filter, active current, power loss, power factor.

Received: 28.02.2020

Published: 05.05.2020

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