

عنوان مقاله:

A Three-Phase Four-Wire Power Filter Comprising an improved Active Power Filter and a Zig-Zag Transformer

محل انتشار:

کنفرانس بین المللی چشم انداز 2020 و پیشرفت های تکنولوژیک مهندسی برق، کامپیوتر و فناوری اطلاعات (سال: 1395)

تعداد صفحات اصل مقاله: 15

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خلاصه مقاله:

Nowadays the three- phase-four-wire systems are widely used in low voltage applications. However these systems have serious problems of harmonic and neutral line current contamination. Harmonics that are cause by the existence of non-linear loads or unbalance linear loads in the system affect the amount of current passing through the neutral line in the distribution system. Todays, Active power filters (APFs) have been developed widely to solve the problems of harmonic suppression and reactive power compensation. In this paper, a three-phase four-wire power filter comprising a three-phase three-wire APF and a Zig-Zag transformer is developed. In the proposed APF, Z-Source inverter topology is used to solve the problems and complications of conventional inverters. The Z-source inverter employs a unique impedance network (or circuit) to couple the inverter main circuit to the power source (DC BUS). Simulation is carried out by MATLAB software. Simulation results show that the proposed power filter has the desired .performance under unbalanced linear and non-linear load conditions

کلمات کلیدی:

Active power filter (APF), harmonic, Zig-Zag transformer, Z-Source

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<https://civilica.com/doc/572013>

