

Design of Single-Phase Shunt Active Filter for Three-Phase Four-Wire  
Distribution Systems

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Abstract

This study presents single-phase shunt active filter for three-phase four-wire distribution systems to alleviate the overloading of the neutral conductor. The single-phase shunt active filters are installed near the nonlinear diode rectifier loads for each phase. The single-phase shunt active filter system compensates for current harmonics of the diode rectifier load. Furthermore, an integrated pulse width modulator with dead-time generator is adopted to improve output voltage accuracy of single-phase shunt active filter. Simulation and test results are utilized to verify the performance of the single-phase shunt active filter for three-phase four-wire distribution systems

Keyword : shunt active filter