Abstract

This paper deals with the simulation of a unified series-shunt compensator (USSC) aimed at examining its capability in improving power quality in a power distribution systems. The USSC simulation model comprises of two 12-pulse inverters which are connected in series and in shunt to the system. A generalized sinusoidal pulse width modulation switching technique is
developed in the proposed controller design for fast control action of the USSC. Simulation results verify the capabilities of the USSC in performing voltage sag compensation, flicker reduction, voltage unbalance mitigation, UPS mode, power-flow control and harmonics elimination. A comparison of the USSC with other custom power devices shows that the USSC gives a better performance in power-quality mitigation.

Reference

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Index Terms

Computer Science
Information
Technology

Key words

Power Quality Mitigation
USSC
Simulation Model
Comparison with D-STATCOM and DVR