

عنوان مقاله:

Indirect Control for Cascaded H-bridge Rectifiers with Unequal Loads

محل انتشار:

سومین کنفرانس بین المللی الکترونیک قدرت و سیستمهای درایو (سال: 1390)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

In this paper, an indirect control strategy for multilevel cascaded H-bridge rectifiers is introduced. The indirect control does not need any current sensors, hence the system reliability increases. Using this method, controllable power factor with nearly sinusoidal ac current could be achieved. All dc link voltages are regulated to a constant reference voltage, even if they consume various amounts of power. In the proposed strategy, the multicarrier phase-shifted sinusoidal pulsewidth modulation (MPS-SPWM) technique is used in order to eliminate low order harmonics, while the maximum switching frequency is limited to 500Hz. Additionally, no extra ac filters are needed at the ac side since the total harmonic distortion is below 5%. To verify the validity and effectiveness of the proposed control strategy, several simulations are carried out on a 7-level cascaded H-bridge rectifier in PSCAD/EMTDC environment.

کلمات کلیدی:

Multilevel cascaded H-bridge; Active rectifier; Indirect control ; MPS-SPWM modulation

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