Harmonic Current Compensator

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Abstract

This paper presents the design and implementation of a Harmonic Current Compensator. Sources of harmonics, harmonic distortion, detrimental effects of harmonics and harmonic elimination methods are considered. Paper describes the operating concept and the system design of the compensator. The compensator mainly consists of two units: the control unit and the full bridge inverter unit. Hysteresis current control is used in the control unit which includes current sensors, 50Hz filter, low pass filter and hysteresis comparator units. Full bridge inverter unit consists H-Bridge, full wave rectifier and current injector. Harmonic current compensator shapes up the input current as sinusoidal irrespective of the shape of load current and it injects harmonic currents adaptively.