# Delta-modulated buck-type PWM converter

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**Abstract**

A delta-modulated, current-source, three-phase pulsewidth modulation (PWM) rectifier is described. The rectifier is intended to be used in conjunction with controlled current inverters. An outer proportional feedback loop regulates the unidirectional output current flowing through the DC link. An inner feedback loop maintains near sinusoidal waveform currents at unity or leading power factor from the utility power supply. The inner loop controls the current indirectly by delta modulation of the voltage across the AC terminals of the converter. The converter has been conceived as the circuit dual of the hysteresis current-controlled boost-type rectifier. Experimental results from a laboratory model are presented

Keywords: delta modulation; electric current control; power convertors; pulse width modulation; rectifiers