

**METHOD AND APPARATUS FOR SYNCHRONIZING PWM SINUSOIDAL
DRIVE TO A DC MOTOR**

ABSTRACT

A method and circuit for operating a polyphase dc motor in which discontinuous sinusoidal drive voltages are applied to the windings of the motor in predetermined
5 phases. The discontinuous portion of the sinusoid is timed with the bmf zero crossings. Bmf zero crossings are detected, and phases of the drive voltages are adjusted to have zero crossings substantially in the discontinuities of the drive voltages. The method and circuit result in motor operation with significantly reduced acoustic motor noise.

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Figure 4