

CURRENT MODE PWM TECHNIQUE FOR A BRUSHLESS MOTOR

Abstract

A brushless motor (20) is controlled by increasing or decreasing motor speed according to a pulse width modulation (PWM) control signal (36). The PWM signal (36) varies according to an error signal (35) proportional to the difference between a desired motor current and an actual motor current. A motor current sensor is used to sense an actual motor current. A current comparator compares the reference signal (34) and the actual current signal (32). A pulse width modulator (28) converts the error signal (35) to a pulse-width modulated error signal (36). Armature position sensors (12) sense armature positions of the motor (20). A commutator circuit (14) receives the PWM error signal (36) and the armature positions. Power switches (18, 22) are coupled to outputs of the commutator (14) and also coupled to the motor (20). The commutator (14) controls activation and deactivation of the power switches (18, 22) based on the corresponding PWM error signal (36) to control the motor (20) at a desired motor current.

Fig 1



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