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(54) **REDUNDANT BRUSHLESS DIRECT CURRENT MOTOR CONTROL SYSTEM AND RELATED METHODS**

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(57) **ABSTRACT**

Brushless direct current (BLDC) motors are becoming more common, such as in cars and other vehicles. Unreliable BLDC motors or control systems can lead to risk of people's safety. A redundant BLDC control system is provided to control two or more BLDC motors. A safety module controls an enabling switch in each of the motor drivers, so that in response to detecting a fault condition, a currently active BLDC motor is disabled and a redundant BLDC motor is enabled. A digital processor computes and transmits digital signals to all the motor drivers continuously and simultaneously, so that the transition from a currently active BLDC motor to a redundant BLDC motor is smooth and almost unnoticeable.