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(54) Title: CONTROL METHOD OF ELECTRIC DRIVE SYSTEM OF VEHICLE, ELECTRIC DRIVE SYSTEM, AND VEHICLE

(54) 发明名称: 车辆电驱动系统控制方法、电驱动系统和车辆

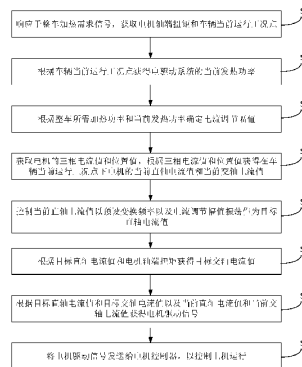


图 1

- S1 In response to a vehicle heating demand signal, acquire a motor shaft end torque and a present operating point of a vehicle
- S2 Obtain a present heating power of an electric drive system according to the present operating point of the vehicle
- S3 Determine a current adjustment amplitude according to the heating power required by the vehicle and the present heating power
- S4 Acquire a three-phase current value and a position value of a motor, and obtain, according to the three-phase current value and position value, a present direct-axis current value and a present quadrature-axis current value of the motor at the present operating point of the vehicle
- S5 Control the present direct-axis current value to oscillate according to a preset change frequency and the current adjustment amplitude to obtain a target direct-axis current value
- S6 Obtain a target quadrature-axis current value according to the target direct-axis current value and the motor shaft end torque
- S7 Obtain a motor drive signal according to the target direct-axis current value and the target quadrature-axis current value as well as the present direct-axis current value and the present quadrature-axis current value
- S8 Send the motor drive signal to a motor controller to control the operating of the motor

(57) Abstract: A control method of an electric drive system of a vehicle, comprising: obtaining a present heating power of an electric drive system according to a present operating point of a vehicle; determining a current adjustment amplitude according to the heating power required by the vehicle and the present heating power; obtaining, according to a three-phase current value and position value of a motor, a present direct-axis current value and a present quadrature-axis current value of the motor at the present operating point of the vehicle; and controlling the present direct-axis current value to oscillate according to a preset change frequency and the current

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GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW。

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adjustment amplitude to obtain a target direct-axis current value, such that the electric drive system can generate heat, and the oscillation of the current flowing through a power battery itself can increase the self-heating rate of the power battery, enabling the electric drive system of the vehicle to be applicable in cold regions. Also disclosed are an electric drive system and a vehicle.

(57) 摘要: 一种车辆电驱动系统控制方法, 包括: 根据车辆当前运行工况点获得电驱动系统的当前发热功率; 根据整车所需加热功率和当前发热功率确定电流调节幅值; 根据电机的三相电流值和位置值获得在车辆当前运行工况点下电机的当前直轴电流值和当前交轴电流值; 控制当前直轴电流值以预设变换频率以及电流调节幅值振荡作为目标直轴电流值, 进而使得电驱动系统发热, 且流经动力电池自身的电流振荡, 能够加速动力电池自身发热速率, 从而使该车辆电驱动系统能够适用于寒冷地区。一种电驱动系统和一种车辆也被公开。