

초소형전기차 모터 및 인버터 고장진단에 관한 연구

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A Study on Failure Diagnosis of Micro Electric Vehicle Motor and Inverter

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Key Words : Micro-EV(초소형전기차), In-wheel Motor(인휠모터), Inverter(인버터), fault diagnosis(고장진단)

ABSTRACT

The micro electric vehicle is a means of transportation optimized for short-distance movement in urban areas. Recently, micro electric vehicles are attracting attention as a means of transportation in the future, and various types of vehicles are being launched around the world. However, safety standards for micro electric vehicles are still insufficient, and safety is weak compared to existing passenger cars. In this study, a fault diagnosis system for motors and inverters was described to improve the safety of micro electric vehicles. The fault diagnosis system is implemented based on the data of the in-wheel motor and inverter. Data items consist of throttle signal, motor RPM, motor temperature, inverter voltage, current, temperature, and slope. The fault diagnosis system collects data based on CAN communication and determines whether there is a fault. In order to check data and fault diagnosis results in real time, the system was configured so that it can be checked based on GUI. In order to verify this system, a dedicated test bed was manufactured and tested. As a result of the test, the verification of the system was confirmed by checking the alarm in a specific failure condition according to the predefined scenario.

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