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ICS 43.040.01
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ASSOCIATION STANDARD

T/CSAE 41-2015

Electric vehicles -- test and specification for vehicle control unit

电动汽车整车控制器测试评价规范

(English Translation)

Issued on: November 5, 2015 **Implemented on: November 5, 2015**

Issued by: China Society of Automotive Engineers

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Foreword

"Electric Vehicle Vehicle Controller Test Evaluation Specification" introduces the application conditions of the electric vehicle controller and specifies the basic norms of test evaluation, in order to provide a basis for enterprises to develop electric vehicle controllers, and also beneficial to China's electric vehicles the industry forms a unified diagnostic and maintenance standard.

-- Part 1. Scope of application of the document;

-- Part 2. Normative references;

-- Part 3. Definitions and terminology;

-- Part 4. Classification of system function status;

-- Part 5. Specific test specifications.

This specification was proposed by the Electric Vehicle Industry Technology Innovation Alliance.

This specification is under the jurisdiction of the China Automotive Engineering Society.

This document was drafted. Tianjin Qingyuan Electric Vehicle Co., Ltd., Beijing University of Aeronautics and Astronautics

1 Scope

This standard only specifies the test and evaluation method for the performance and reliability of the hardware controller of the electric passenger vehicle.

The purpose of this standard is to serve as the basis for the evaluation of the vehicle controller within the company.

This specification applies to the evaluation of vehicle controllers based on electric vehicles and hybrid vehicles.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies.

This document. For undated references, the latest edition (including all amendments) applies to this document.

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QC/T 413-2002 Basic technical conditions for automotive electrical equipment GB/T 17619 Electromagnetic radiation immunity limits and measuring methods for motor vehicle electrical and electronic components CISPR 25.2008 Vehicles, boats and internal combustion engines - Radio disturbance characteristics -Limits and methods of measurement for the protection of on-board receivers ISO 10605.:2008 Road vehicles - Test methods for electrical disturbances from electrostatic Discharge ISO 7637-2:2011 Road vehicles - Electrical disturbances from conduction and coupling - Part 2.

Electrical transient sales along supply lines only ISO 11452-2Road vehicles - Component test methods for electrical disturbances from narrowband Radiated electromagnetic energy - Part 2. Absorber-lined shielded enclosure ISO 11452-4:2011 Road vehicles - Component test methods for electrical disturbances from Narrowband radiated electromagnetic energy - Part 4. Bulk current injection (BCI) ISO 16750.1 Road vehicle-Environmental conditions and testing for electrical and electronic Equipment Part 1. General ISO 16750.2 Road vehicle-Environmental conditions and testing for electrical and electronic Equipment Part 2. Electrical loads GB/T 2423.1-2008 Environmental testing of electrical and electronic products - Part 2. Test methods Test A. Low temperature GB/T 2423.2-2008 Environmental testing of electrical and electronic products - Part 2. Test methods Test B. High temperature GB/T 2423.10-2008 Environmental testing of electric and electronic products - Part 2. Test method test F c. Vibration (sinusoidal) GB/T 2423-17-2008 Basic environmental test procedures for electrical and electronic products test Ka. salt spray test method GB/T 2423-22-2012 Basic environmental test procedures for electric and electronic products - Test N. Test method for temperature change GB/T 2423-34-2012 Environmental testing for electric and electronic products - Part 2. Test methods Test Z/AD. Temperature/humidity combination Ring test GB 4208-2008 enclosure protection grade (IP code) GB/T 4365 Electrotechnical Terminology - Electromagnetic Compatibility

3.1 Vehicle controller

By collecting driver driving signals, managing, scheduling, analyzing, and computing network information through the CAN bus to electric vehicles Line energy management, vehicle control system that implements vehicle drive control, energy optimization control and brake feedback control.

3.2 Electromagnetic compatibility

The ability of a device or system to function properly in its electromagnetic environment without causing unacceptable electromagnetic disturbances to anything in the environment force.

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3.3 Electromagnetic disturbance

Any electromagnetic phenomenon that may degrade the performance of the device, equipment, or system or adversely affect biological or abiotic.

Note: Electromagnetic disturbances can be electromagnetic noise, unwanted signals or changes in the medium itself.

3.4 (for harassment) immunity the ability of a device,, or system to experience electromagnetic disturbances without degrading operational performance.

3.5 Electromagnetic environment

The sum of all electromagnetic phenomena present at a given location.

3.6 Immunity limit

The specified minimum immunity level.

3.7 Reference antenna

In 20MHz to 80MHz, it means a short-balanced dipole antenna with a half-wave resonant dipole at 80MHz; above 80MHz means A balanced half-wave resonant dipole tuned to the measured frequency.

3.8 Shielding room

A screen or integral metal enclosure designed to isolate indoor and outdoor electromagnetic environments. Its purpose is to block outdoor electromagnetic the field interferes with the indoor environment and prevents interference emissions from various outdoor electromagnetic activities.

3.9 Semi-anechoic chamber

In addition to the floor, the remaining inner surfaces are provided with a shielded chamber of absorbing material.

3.10 Outer casing

A component of a device that protects the device from external influences and prevents direct contact in all directions.

3.11 Degree of protection

Non-inspection method as specified by the standard, the protection provided by the enclosure to access dangerous components, prevent the entry of solid foreign objects or

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