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**Road Vehicles—Low-Voltage Electrical System
Performance Requirements and Test Methods**
道路车辆 低压电气系统性能要求及试验方法

(English Translation)

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Road Vehicles—Low-Voltage Electrical System Performance Requirements and Test Methods

1 SCOPE

This document specifies the performance requirements for 12V/24V low-voltage electrical system of road vehicles, and describes the corresponding test methods.

This document is applicable to the vehicles of Categories M and N, while this document may be used as a reference for other category of vehicles.

This document is not applicable to the high-voltage electrical system part of electric vehicles.

2 NORMATIVE REFERENCES

The following normative documents contain provisions which, through normative reference in this text, constitute essential provision of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

GB/T 5008.1	Lead-acid starter batteries - Part 1: Technical conditions and methods of test
GB/T 12535-2021	Test method of starting performance for motor vehicle
GB/T 21437.2-2021	Road vehicles - Test method of electrical disturbances from conduction and coupling - Part 2: Electrical transient conduction along supply lines only
GB/T 25085.1	Road vehicles - Automotive cables - Part 1: Vocabulary and design guidelines
GB/T 28046.1	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 1: General
GB/T 28046.2-2019	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 2: Electrical loads
GB/T 31465 (all parts)	Road vehicles - Fuse-links

3 TERMS AND DEFINITIONS

For the purpose of this document, the terms and definitions established in GB/T 28046.1 apply.

4 ABBREVIATIONS

For the purpose of this document, the following abbreviations apply.

DC/DC: DC/DC Converter

EPS: Electronic Power Steering

PEPS: Passive Entry Passive Start

SOC: State of Charge

5 TECHNICAL REQUIREMENTS

5.1 Quiescent Current

Obtain the magnitudes of quiescent current of the vehicle and each controller, check whether any non-designed quiescent current exists, and evaluate whether the vehicle meets the transportation duration requirements and the starting requirements after a long storage period. After the test is carried out according to 6.5, the quiescent current of the vehicle and its components, e.g., controller, under different use scenarios shall not exceed the design values.

5.2 Electrical Balance

Obtain the relationships between power generation and consumption of battery, generator or

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