

ICS 43.040
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中华人民共和国国家标准
NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 39086-2020

**Functional Safety Requirements and Testing Methods
for Battery Management System of Electric Vehicles**
电动汽车用电池管理系统功能安全要求及试验方法

Issued on 2020-09-29

Implemented on 2021-04-01

Jointly Issued by

State Administration for Market Regulation of the People's Republic of China &
Standardization Administration of the People's Republic of China

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Functional Safety Requirements and Testing Methods for Battery Management System of Electric Vehicles

1 SCOPE

This standard specifies the functional safety requirements and test methods for battery management system (BMS) of electric vehicles.

This standard applies to the lithium-ion power battery management system for electric passenger cars, while the management system of other type of power battery and the power battery management system for other type of vehicle may use this standard as a reference.

2 NORMATIVE REFERENCES

The following referenced documents are indispensable for the application of this document. For dated references, only the editions cited apply. For undated references, the latest editions of the normative document (including any amendments) apply.

GB 18384-2020	Electric Vehicles Safety Requirements
GB/T 19596-2017	Terminology of electric vehicles
GB/T 34590-2017 (all parts)	Road vehicles - Functional safety
GB 38031-2020	Electric vehicles traction battery safety requirements
GB/T 38661-2020	Technical specifications of battery management system for electric vehicles

3 TERMS AND DEFINITIONS

For the purpose of this document, the terms and definitions established in GB/T 19596-2017 and GB/T 34590.1-2017 as well as the followings apply. For the convenience of use, some terms and definitions in GB/T 19596-2017 are duplicated herein.

3.1

Battery management system (BMS)

The system that can monitor the states (e.g., temperature, voltage and state-of-charge, etc.) of battery, provide communication, safety, cell balancing and management control for the battery, and provide communication interface for application devices

[GB/T 19596-2017, Definition 3.3.2.1.10]

3.2

Secondary cell

The basic functional unit, which realizes mutual conversion between chemical energy and electric energy, generally consisting of electrodes, separators, electrolyte, container and terminals, and is designed to be electrically recharged

[GB 38031-2020, Definition 3.1]

3.3

High voltage power system

The system of high-voltage driving components above voltage class B inside the EV, which is linked with the traction battery DC bus or is propelled by the traction battery power source, mainly including but not limited to traction battery system and/or high voltage distribution system (e.g., high voltage relay, fuse, resistor and main switch, etc.), electric machine and its controller system, DC/DC convertor and on-board charger, etc.

[GB/T 19596-2017, Definition 3.1.2.1.11]



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