

ICS 43.080  
T 47



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

GB/T 38661-2020

**Technical Specifications of Battery Management System  
for Electric Vehicles**

**电动汽车用电池管理系统技术条件**

*(English Translation)*

Issued on 2020-03-31

Implemented on 2020-10-01

Jointly Issued by

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

# Technical Specifications of Battery Management System for Electric Vehicles

## 1 SCOPE

This standard specifies the technical requirements, test methods and inspection rules of traction battery management system (hereinafter referred to as “BMS”) for electric vehicles.

This standard is applicable to the management systems of lithium-ion traction batteries and nickel-metal hydride traction batteries for electric vehicles, while the management systems of other types of traction batteries 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/T 4365         | Electrotechnical terminology-Electromagnetic compatibility  |
| GB/T 17626.4-2018 | Electromagnetic compatibility - Testing and measurement techniques - Electrical fast transient/burst immunity test  |
| GB/T 18384.3-2015 | Electrically propelled road vehicles - Safety specifications - Part 3: Protection of persons against electric shock   |
| GB/T 18655-2018   | Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers                        |
| GB/T 19596-2017   | Terminology of electric vehicles  |
| GB/T 19951        | Road vehicles - Disturbances test methods for electrical/electronic component from electrostatic discharge  |
| GB/T 21437.2-2008 | Road vehicles - Electrical disturbances from conduction and coupling - Part 2: Electrical transient conduction along supply lines only  |
| GB/T 21437.3-2012 | Road vehicles - Electrical disturbances from conduction and coupling - Part 3: Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines |
| GB/T 27930        | Communication protocols between off-board conductive charger and battery management system for electric vehicle   |
| GB/T 28046.1-2011 | Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 1: General  |
| GB/T 28046.2-2011 | Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 2: Electrical loads   |
| GB/T 28046.3-2011 | Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 3: Mechanical loads   |
| GB/T 28046.4-2011 | Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 4: Climatic loads   |
| GB/T 33014.2      | Road vehicles - Component test methods for electrical/electronic disturbances from narrowband radiated electromagnetic energy – Part 2: Absorber-lined shielded enclosure               |
| GB/T 33014.4      | Road vehicles - Component test methods for electrical/electronic disturbances from narrowband radiated electromagnetic energy - Part 4: Bulk current injection (BCI)                    |
| ISO 11452-8:2015  | Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 8: Immunity to  |

magnetic fields

### **3 TERMS AND DEFINITIONS**

For the purposes of this document, the terms and definitions established in GB/T 4365, GB/T 19596-2017, GB/T 28046.1-2011 and the followings apply. For the convenience of use, some terms and definitions contained in GB/T 19596-2017 are duplicated herein.

#### **3.1 Battery electronics**

Electronic device that collects and/or monitors electric and thermal data of battery cells or modules, and may contain electronics for cell balancing, if necessary

Note: The battery electronics may include a cell controller. The functionality of cell balancing may be controlled by the battery electronics or by the battery control unit (BCU).

[GB/T 19596-2017, Definition 3.3.2.1.5]

#### **3.2 Battery control unit (BCU)**

Electronic device that controls, manages, detects or calculates electric and thermal functions of the battery system and that provides communication between the battery system and other vehicle controllers

[GB/T 19596-2017, Definition 3.3.2.1.4]

#### **3.3 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]



# ChinaAutoRegs

中国汽车标准译文库

## **The following pages are left blank intentionally.**

- 现成译文，到款即发。
  - 下单前可任取样页验证译文质量。
  - 免费提供正规普通增值税数电发票。
  - 请联系手机/微信: [13306496964](tel:13306496964)/Email: [standardtrans@foxmail.com](mailto:standardtrans@foxmail.com) 获取完整译文。
  - 本英文译本为纯人工专业精翻版本，保证语法术语准确率和专业度！
  - 专业源于专注|ChinaAutoRegs 始终专注于汽车标准翻译领域！
  - 「中国汽车标准译文库」已收录上千个现行汽车国家标准和行业标准的英文版译本，涵盖传统燃油车、新能源汽车和摩托车标准化体系！独家打造千万级汽车专业术语库和记忆库。
  
  - ◆ The English Translation of this document (GB, GB/T, QC/T, CNCA, CQC, CAV, etc.) is readily available, and delivered immediately upon payment.
  - ◆ You may request for sample pages to your preference before placing an order.
  - ◆ Please contact [standardtrans@foxmail.com](mailto:standardtrans@foxmail.com) for the complete PDF version in English.
  - ◆ Almost all of Chinese automotive/automobile standards, regulations and norms in effect have been included in our well-established database, providing one-stop, up-to-date, efficient and professional solution.
-