

ICS 43.020

CCS T 04



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 19596-2017

Replacing GB/T 19596-2004

Terminology of electric vehicles

电动汽车术语

Issued on: October 14, 2017

Implemented on: May 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
 - 3.1 Vehicle
 - 3.1.2 Structure, components
 - 3.1.2.2 Vehicle body, chassis
 - 3.1.2.3 Electrical installations and components
 - 3.1.3 Performance
 - 3.1.3.2 Safety performance
 - 3.1.3.3 Economic performance
 - 3.2 Drive motor system
 - 3.2.1 Motor and controller
 - 3.2.2 Motor type
 - 3.2.3 Controller components
 - 3.2.4 Related devices
 - 3.2.5 Performance parameters
 - 3.3 Rechargeable energy storage system
 - 3.3.1 Type of rechargeable energy storage device
 - 3.3.1.1 Classified by applications
 - 3.3.1.2 Classified by working medium
 - 3.3.1.3 Classified by packaging shape
 - 3.3.2 Structure, components
 - 3.3.2.1 Structure
 - 3.3.2.2 Key components and related devices
 - 3.3.3 Specifications, performance
 - 3.3.3.1 Discharge
 - 3.3.3.5 Energy
 - 3.3.3.6 Power
 - 3.3.3.7 Density
 - 3.3.3.8 Voltage
 - 3.4 Charger
 - 3.4.1 Overview

- 3.4.2 Charging method
- 3.4.3 Control method
- 3.4.4 Structure, components
- 5 Index of corresponding English words...

1 Scope

China's national vocabulary for electric vehicles - the terms in which they are designed, type approved, subsidised, sold and regulated. It defines the terms and definitions relating to electric vehicles, with an index of the corresponding English words. Electric vehicles arrived as a whole technology at once, and the vocabulary had to be built rather than inherited. The starting point is the classification of the vehicles themselves - battery electric, hybrid electric in its several architectures, plug-in hybrid, range-extended, fuel cell - and these are not academic distinctions: they determine which regulations apply, which incentives a vehicle qualifies for and how its consumption is measured, so the boundaries between them have to be drawn precisely enough to survive a manufacturer's interest in where a particular model falls. Beyond that the vocabulary covers the energy storage system and its terms - cell, module, pack, capacity, state of charge, state of health, usable energy - which are among the most abused terms in the industry, since a battery quoted at nominal capacity and one quoted at usable energy differ substantially. It covers the drive system, the power electronics, the charging equipment and its modes and connectors, the on-board and off-board charging distinction, the regenerative braking terms, and the performance terms: range and the conditions under which it is stated, energy consumption, and the various power ratings a motor can be quoted at. The English index is part of the document because this is an industry in which almost every specification crosses a language boundary. Issued on 14 October 2017 and in force since 1 May 2018, it replaces GB/T 19596-2004.

This standard defines the terms and definitions related to electric vehicles. This standard applies to electric vehicle, drive motor system, rechargeable energy storage system and charger.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 2900.41 Electrotechnical terminology - Primary and secondary cells and batteries

GB/T 19752 Hybrid electric vehicle - Power performance - Test methods

GB/T 24548 Fuel cell electric vehicles - Terminology

GB/T 30038 Road vehicles - Degrees of protection (IP-code) - Protection of electrical equipment against foreign objects, water and access

3 Terms and definitions

The terms and definitions as defined in GB/T 2900.41, GB/T 19752, GB/T 24548 and GB/T 30038 as well as the following terms and definitions apply to this document.

3.1 Vehicle

3.1.1 Electric vehicle; EV The following vehicles are collectively called electric vehicles.

3.1.1.1 Battery electric vehicle; BEV Vehicles the driving energy of which is totally provided by electric energy, driven by motor. The motor drive power is from the on-board rechargeable energy storage system or other energy storage devices.

3.1.1.2 Hybrid electric vehicle; HEV Vehicles that are capable of being powered by at least two types of on-board storage.

3.1.2 Structure, components

3.1.2.1 Drive, driving device 3.1.2.1.4 Power train The combination of power unit and drive system. 3.1.2.1.5 Drive direction control A special device for selecting the direction of the vehicle travel (forward or reverse) by the driver's operation. For example. joystick or button switch. 3.1.2.1.6 Vehicle control unit Powertrain controller, which collects the accelerator pedal signal, brake pedal signal and other component signals, makes the appropriate judgments, controls the actions of each underlying component controller, to realize the vehicle drive, brake, and energy recovery. 3.1.2.1.7 Electric power system Circuit systems that generate, transport, and use electrical energy, including power supplies. 3.1.2.1.8 Regenerative braking The system that converts (or partially converts) the kinetic energy and potential energy of the vehicle in the driving process into the energy of the on-board rechargeable energy storage system and store it when the vehicle slides, slows down or descends.

3.1.2.3 Electrical installations and components

3.1.2.4 Indicators, signaling devices 3.1.2.4.1 Battery overheat warning device A device that issues alarm signal when the power battery electrolyte temperature exceeds the limit.

3.1.2.4.2 Battery level warning device A device that issues alarm signal when the power battery electrolyte level is too low and requires addition. 3.1.2.4.3 Residual capacity gauge Instrument that shows the remaining battery power capacity.

3.1.3 Performance

3.1.3.1 Driving performance 3.1.3.1.1 Discharged energy Power energy released by the energy storage device in the electric vehicle driving process, in Wh. 3.1.3.1.2 Regeneration braking The system that converts (or partially converts) the kinetic energy and potential energy of the vehicle in the driving process into the energy of the on-board rechargeable energy storage system and store it when the vehicle slides, slows down or descends. 3.1.3.1.3 Regenerated energy Electric energy recovered by the electric vehicles through regeneration braking in the driving process, in Wh.

3.2.2 Motor type

3.2.2.1 DC series electrical machine DC motor with field windings and armature windings in series.

3.2.2.2 DC shunt electrical machine DC motor with field windings and armature windings in parallel.

3.2.2.3 Brushless brushless electrical machine The DC motor using electronic circuit to replace the brush and mechanical commutator, generally it is composed of three parts. permanent magnet rotor motor body, rotor position sensor, and electronic commutation circuit.

3.2.2.4 AC induction electrical machine The AC motor for which the stator and the rotor are independent windings, both of them transmit torque through electromagnetic induction, their rotors rotate at lower / higher air gap rotating magnetic field.

3.2.2.5 AC synchronous electrical machine The AC motor for which the rotor and air gap rotating magnetic field rotate synchronously.

3.2.3 Controller components

3.2.3.1 Convertor (converter) A device that changes one or more characteristics (voltage, current, waveform, phase, frequency) of an electrical system. 3.2.3.1.1 Inverter Convertor that converts the DC current into AC current. 3.2.3.1.2 Rectifier Convertor that converts the AC current into DC current. 3.2.3.1.3 Chopper The convertor that turns on/off the input DC voltage at certain frequency, thereby changing the average output voltage.

3.2.4 Related devices

3.2.4.1 DC / DC convertor (converter) Convertor that converts a certain DC power supply voltage into any DC voltage.

3.2.4.2 Cooling equipment Device for cooling the motor and controller.