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

GB/T 26846-2024

Replacing GB/T 26846-2011

**Lead-out wires and connectors of motors and controllers for
electric bicycles**

电动自行车用电动机和控制器的引出线及接插件

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Table of Contents

1	Scope
2	Normative references
3	Terms and definitions
4	Product Structure
4.1	Pinout structure
4.2	Connector structure
5	Requirements
5.1	General
5.2	Electrical performance
5.3	Mechanical properties
5.4	Environmental performance
6	Test methods
6.2	Electrical performance test
6.3	Mechanical properties test
6.4	Environmental performance test
7	Inspection Rules
7.1	General
7.2	Test Matrix
7.3	Factory Inspection
7.4	Periodic Inspection
7.5	Type inspection
8	Marking, packaging, transportation and storage
8.1	Sign
8.2	Packaging
8.3	Transport
16	Test flame 50W horizontal and vertical flame test method
25	References

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. This document replaces GB/T 26846-2011 "Lead wires and connectors for motors and controllers for electric bicycles" and GB/T 26846- Compared with.2011, in addition to structural adjustments and editorial modifications, the main technical changes are as follows:

- a) The lead wire structure has been changed (see Chapter 4, 4.2 of the.2011 edition);
- b) Deleted the structural check (see 5.3 of the.2011 edition);
- c) Added general rules for lead wires and connectors (see 5.1);
- d) The requirements and test methods for contact resistance have been changed (see 5.2.1, 6.2.1, 4.8, 5.9 of the.2011 edition);
- e) Added voltage drop requirements and test methods (see 5.2.2, 6.2.2);
- f) The requirements and test methods for insulation resistance have been changed (see 5.2.3, 6.2.3, 4.7, 5.8 of the.2011 edition);
- g) The requirements and test methods for withstand voltage have been changed (see 5.2.4, 6.2.4, 5.8 of the.2011 edition);

1 Scope

China's national standard for the lead-out wires and connectors used between the motor and the controller of an electric bicycle. It specifies the requirements, the test methods, the inspection rules and the marking for the cables leaving the motor and the controller and for the connectors that join them. This is a small standard about a component that causes a disproportionate share of the failures and the fires in a very large fleet. China has hundreds of millions of electric bicycles, and the connection between the motor and its controller carries the full traction current of the machine through a plug that sits under the frame, exposed to rain, road spray, dirt and vibration, and that is disconnected and reconnected every time the wheel or the controller is serviced. A joint carrying tens of amps that develops a few tens of milliohms of contact resistance dissipates enough heat to melt its own housing, and the failure is progressive: heat oxidises the contact, oxidation raises the resistance, and the resistance makes more heat. The 2024 edition is a substantial revision. It adds general rules for the lead wires and the connectors, changes the contact resistance requirement and its test, and introduces requirements that the 2011 edition did not have at

all: voltage drop, welding tear-off force, the reliability of the terminal surface coating, prevention of wrong-polarity insertion, retention of the wire in the connector, vibration, mechanical shock, drop, high and low temperature, and temperature shock. The structural check of the older edition is deleted and the lead wire structure is changed. Issued on 28 November 2024 and in force since 1 June 2025, it replaces GB/T 26846-2011.

This document specifies the general rules, electrical performance, mechanical performance, environmental It describes the testing equipment and instruments and the corresponding test methods, and stipulates the inspection rules, marking, packaging, transportation and storage. Requirements, terms and definitions are defined to facilitate technical regulations, and product structure is given. This document applies to the lead wires and connectors of electric motors and controllers for electric vehicles included in power-assisted bicycles as defined in QB/T 1714. Design, production, inspection and sales of plug-ins.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 191 Pictorial markings for packaging, storage and transportation

GB/T 2423.5 Environmental testing Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Lead-outwire Cables connecting the motor and controller to the connector.

3.2 Connector An assembly consisting of terminals, sheaths and their accessories for achieving electrical connection.

3.3 Plug A connector consisting of a connector housing and terminals that can be inserted into a socket for electrical connection.

16 Test flame 50W horizontal and vertical flame test method

GB/T 12742 Technical requirements for bicycle testing equipment and instruments

GB/T 26125 Determination of six restricted substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers) in electronic and electrical products

GB 42295 Electrical safety requirements for electric bicycles

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