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

GB/T 38116-2019

**Low-voltage docking connectors for removable energy storage
units**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify the use of IEC TS63066.2017 "Low-voltage docking connector for mobile energy storage unit".

This standard has a structural change compared to IEC TS63066.2017. According to the requirements of GB/T 1.1-2009, follow the form in the standard

The order in which the order appears is reordered; the order of the appendix is adjusted, and the original Appendix A and the original Appendix C are swapped.

The technical differences between this standard and IEC TS63066.2017 and their reasons are as follows.

---About the normative reference documents, this standard has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

- * Replace IEC 60068-2-1 with GB/T 2423.1 equivalent to the international standard;
- * Replace IEC 60068-2-2 with GB/T 2423.2 equivalent to the international standard;
- * Replace IEC 60068-2-30 with GB/T 2423.4 equivalent to the international standard;
- * Replace IEC 60068-2-52 with GB/T 2423.18 equivalent to the international standard;
- * Replace IEC 60068-2-14 with GB/T 2423.22-2012 equivalent to the international standard;
- * Replace IEC 60068-2-38 with GB/T 2423.34 equivalent to the international standard;
- * Replace IEC 60068-2-60 with GB/T 2423.51 equivalent to the international standard;
- * Replace IEC 61140.2016 with GB/T 17045-2008 equivalent to the international standard;
- * Replace IEC 60352 (all parts) with GB/T 18290 (all parts) equivalent to international

standards;

* Replace IEC 61373.2010 with GB/T 21563-2018 modified to adopt international standards;

* Added reference to GB/T 5095.2-1997;

* Added reference to GB/T 5465.1-2009.

This standard has made the following editorial changes.

--- According to the relevant provisions of GB/T 1.1, in Chapter 1 "Scope" added "this standard specifies the mobile energy storage unit

Technical requirements for the structure, mechanical properties, electrical performance of low-voltage docking connectors";

--- According to the reference standard, in the second chapter, the reference documents GB/T 4208-2017, GB/T 13539.1-2015,

GB/T 13539.2-2015;

--- For ease of reference, 27.2 added a note. Tavg refers to the average.

This standard was proposed by the China Electrical Equipment Industry Association.

This standard is under the jurisdiction of the National Electrical Equipment Standardization Technical Committee (SAC/TC67).

This standard was drafted. China Electric Apparatus Research Institute Co., Ltd., Bull Group Co., Ltd., Zhejiang Zhongxun Electronics Co., Ltd.

Sichuan Yonggui Technology Co., Ltd., Suzhou Electric Apparatus Research Institute Co., Ltd., Ningbo Ouzhi Electrical Technology Co., Ltd., Ningbo China Branch

Institute of Information Technology Application, Shenzhen Huayitong Industrial Electric Co., Ltd., Weikai Testing Technology Co., Ltd., Sichuan Huafeng Enterprise Group

Limited.

Introduction

Pluggable energy storage technologies have a number of needs and prospects in certain areas. Energy storage list for electric vehicles and renewable energy

The emergence of meta and other applications requires specification to ensure safe and reliable operation, interchangeability, environmental protection and energy efficiency.

Industry needs

It is expected to promote technological development and popularize pluggable energy storage technologies.

There are some special points to consider compared to other accessory products. The docking process may not be able to find the connector by human manipulation.

The correct position of the two parts. The docking process may have mechanical feed that will prevent the correct position of the two parts of the connector from being found. To overcome these questions

The accessory design can include partially movable parts to compensate for mechanical feed and tolerances.

Low voltage docking connector for mobile energy storage unit

1 Scope

This standard specifies the technical requirements for the structure, mechanical properties, electrical performance and other requirements of low-voltage docking connectors for mobile energy storage units.

This standard applies to low-voltage docking connectors (hereinafter referred to as accessories) installed or fixed on electrical equipment. This attachment is expected to be used

The mobile energy storage unit is coupled to a dedicated power conversion unit, energy consuming unit, or another energy storage unit.

These accessories are intended for direct current and may include ground contacts and/or optional signal and data auxiliary contacts. Rated current of these accessories

Not more than 800A, the rated working voltage does not exceed 1000Vd.c.

These accessories are not intended for plugging and unloading under load. These accessories are expected to be exclusively used by professionals (GB/T 2900.73-

2008, definition 195-04-02) or technician (GB/T 2900.73-2008, definition 195-04-01) installation.

The preferred ratings listed do not exclude other ratings.

This standard applies to accessories used in the environment specified in Chapter 32.

These accessories are intended to be connected only to copper or copper alloy cables with or without plating.

This standard also applies to accessories intended for use at very low voltages.

Additional requirements may apply under special environmental conditions, such as on a vehicle.

These accessories are expected to work with a specific charging system.

Additional requirements may apply to conditions other than operations, such as GB/T 28164 and the UN Recommendations on the Transport of Dangerous Goods.

Clause 38.338.3.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

Chapter 2 of GB/T 11918.1-2014 is applicable to the following additional normative references.

GB/T 2423.1 Environmental testing of electrical and electronic products - Part 2. Test methods Test A. Low temperature (GB/T 2423.1-

2008, IEC 60068-2-1..2007, IDT)

GB/T 2423.2 Environmental testing of electrical and electronic products - Part 2. Test methods Test B. High temperature (GB/T 2423.2-

2008, IEC 60068-2-2.2007, IDT)

GB/T 2423.4 Environmental testing of electrical and electronic products - Part 2. Test method test Db alternating heat (12h 12h

Ring) (GB/T 2423.4-2008, IEC 60068-2-30.2005, IDT)

GB/T 2423.18 Environmental test Part 2. Test method Test Kb. salt spray, alternating (sodium chloride solution) (GB/T 2423.18-

2012, IEC 60068-2-52.1996, IDT)

GB/T 2423.22-2012 Environmental testing - Part 2. Test methods Test N. Temperature change (IEC 60068-2-14.

2009, IDT)

GB/T 2423.34 Environmental testing - Part 2. Test method test Z/AD. Temperature/humidity combination cycle test

(GB/T 2423.34-2012, IEC 60068-2-38..2009, IDT)

GB/T 2423.51 Environmental test Part 2. Test method test Ke. Flow mixed gas corrosion test (GB/T 2423.51-

2012, IEC 60068-2-60..1995, IDT)