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

GB/T 38428.1-2019

**Direct current (DC) plugs and socket-outlets for information and
communication technology (ICT) equipment installed in data centres
and telecom central offices -- Part 1: General requirements**

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Foreword

GB/T 38428 "DC plugs and sockets for information and communication technology (ICT) equipment installed in data center and telecommunication center computer rooms"

The following sections.

--- Part 1. General requirements.

This part is the first part of GB/T 38428.

This section is drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the redrafting method to modify the information and installation of IEC TS62735-1..2015

DC plug and socket for communication technology (ICT) equipment. Part 1. Plug and socket system for 2.6kW.

Compared with IEC TS62735-1..2015, this section has structural changes.

--- Increase 7.1.3, 13.29, 14.16;

--- Added Chapter 30 and Chapter 31;

--- According to the order of reference in the appendix, the original appendix A is modified to appendix B, the original appendix B is modified to appendix A, and the original appendix C is modified to appendix

D, the original appendix D is revised to appendix C.

The technical differences between this part and IEC TS62735-1..2015 and their causes are as follows.

--- According to the actual application of China's products, in Chapter 1, the rated power and rated voltage are changed from "rated power not exceeding 2.6kW,

Constant voltage range from 294V to 400V DC "was revised to" rated power not exceeding 4.0kW, rated voltage range from DC

240V to 400V ".

--- In Chapter 1, the maximum current of the plug and socket was deleted.

--- In Chapter 1, the overcurrent protection was changed from not exceeding 8.8A to not exceeding 16A based on the maximum current of each socket.

--- Regarding the normative references, this section has made adjustments with technical differences to adapt to China's technical conditions and the situation of adjustment.

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

- * Replaced IEC 60529 with GB/T 4208-2017 equivalent to the international standard;

- * Replaced IEC 60245 (all parts) with GB/T 5013 (all parts) equivalent to international standards;

- * Replaced IEC 60227 (all parts) with GB/T 5023 (all parts) equivalent to international standards;

- * Replaced IEC 60695-2-11 with GB/T 5169.11-2017 equivalent to the international standard;

- * Replaced IEC 61032 with GB/T 16842-2016 equivalent to the international standard;

- * Replaced IEC 60423 with GB/T 17194-1997 equivalent to the international standard;

- * Replaced IEC 60068-2-31 with GB/T 2423.7-2018 equivalent to the international standard;

- * Replaced IEC 60352-2 with GB/T 18290.2-2015 equivalent to the international standard;

- * Replaced IEC 61210 with GB/T 17196-2017 which adopted the international standard;

- * Added GB 4943 (all parts), GB/T 2423.4-2008, GB/T 2099.1-2008, GB/T 5465.2-2008, GB/T 2423.55-2006, GB/T 5169.10-2017;

- * ISO 1456 has been removed.

--- In Chapter 6, "Rated Values", a rated power of 4.0kW has been added.

--- In Chapter 6, "Rated Values", modify the rated voltage from "any voltage between 294V and 400V" to "between 240V and

Any voltage between 400V ".

--- Increased 7.1.3 classification according to the number of cycles completed in the test of Chapter 20.

--- 8.1 Added warning label requirements.

--- Chapter 12 For the increased rated power of 4.0kW terminal, refer to 23/743/DTS file of IEC TS62735-2, increase

Corresponding test requirements.

--- According to the actual application of our products, 12.4 increased the insert with a nominal size of 6.4mm x 1.0mm and its corresponding test.

--- In order to ensure the safe use of the product, 13.29 "Sockets and plugs should have corresponding locking and unlocking mechanisms."

--- In order to ensure the safe use of the product, 14.16 "Sockets and plugs should have corresponding locking and unlocking mechanisms" was added.

--- Chapter 20, Chapter 21, added the description of "if there is a locking mechanism, it should be disabled".

--- According to the actual application of our products, Chapter 21 adds the manufacturer's statement of 500 strokes of normal operation test.

--- Added Chapter 30 additional test of the bolt with insulation sheath.

--- Added Chapter 31 Test of Plugs and Sockets in Locked State.

The following editorial changes have been made in this section.

--- Amended the standard name to "DC plugs for information and communication technology (ICT) equipment installed in data center and telecommunication center computer rooms

Sockets Part 1. General requirements;

--- In Chapter 1, "Scope", the first paragraph supplemented "GB/T 38428 This section specifies the installation of data center and telecommunications center room

Technical requirements for the type size, structure, electrical performance, and mechanical performance of DC plugs and sockets for ICT equipment ";

--- Removed some notes from IEC TS62735-1..2015 that are applicable to other countries, such as Note to 7.2.2, Note to 8.5;

--- Removed the AWG US specifications of the wires in the standard, such as Table 1, Table 2, Table 3.

This section is proposed by China Electrical Equipment Industry Association.

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

Drafting organizations of this section. China National Electric Research Institute Co., Ltd., Hangzhou Hongyan Electric Co., Ltd., Sichuan Huafeng Enterprise Group

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1 Scope

This part of GB/T 38428 specifies DC for information and communication technology (ICT) equipment installed in data center and telecommunication center computer rooms.

Technical requirements such as type size, structure, electrical performance, and mechanical performance of plug and socket.

This section applies to Class I equipment with two live contacts and ground contacts, rated power not exceeding 4.0kW, rated voltage range

Plugs and fixed sockets from DC 240V to 400V. They are used only for DC-compliant information and communication technologies in accordance with GB 4943.

Technology equipment and products.

According to this section, ordinary personnel in a data center may use electrical accessories only when the DC voltage distribution system meets the following requirements.

- (380 $\pm$ 20) V equipment, without backup battery and voltage regulation system.
- 380V equipment with a voltage range of 240V to 400V, with a backup battery (the voltage adjustment cannot be guaranteed).
- During normal operation, the voltage between each live wire and ground does not exceed 200Vd.c.
- Has 2 abnormal voltage ranges (duration is less than 10min).
- * 260V ~ 294V;
- * > 400V ~ 410V.

According to this section, no maintenance is required for accessories.

Plugs and sockets within the scope of this section apply to circuits that have been protected by.

- basic protection;
- Overcurrent protection (based on the maximum current of each socket not exceeding 16A);
- fault protection (indirect contact protection); and