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

GB/T 32499-2016

**Connecting devices -- Devices for the connection of aluminium
conductors in clamping units of any material and copper
conductors in aluminium bodied clamping units**

(English Translation)

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Foreword

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

This standard uses redrafted law revision adopted IEC 61545:1996 "clamp connection device of any material connected with aluminum components and aluminum clamp copper wire connecting devices." this standard and IEC 61545:1996 technical differences and for the following reasons.

--- On normative references, this standard has been adjusted technical differences, in order to adapt our technical conditions, adjust the focus reflected in Chapter 2, "Normative references", the specific adjustments are as follows.

- with the GB/T 3956-2008 cable conductor (IEC 60228:2004, IDT) instead of the IEC 60228. 1978 and IEC 60228A. 1982;
- with GB 10963.1-2005 electrical accessories for household and similar circuit breakers for overcurrent protection - Part 1. For AC circuit breaker (IEC 60898-1:2002, IDT) instead of the IEC 60898. 1987;
- Part 1 GB 13140.1 Connecting devices for low voltage circuits for household and similar purposes with. General requirements (GB 13140.1-2008, IEC 60998-1:2002, IDT) instead of the IEC 60998-1:1990;
- Part 2 connecting devices GB 13140.2 household and similar low voltage circuits. Particular requirements for connecting devices as separate units with screw-type clamping units (GB 13140.2-2008, IEC 60998-2-1:2002, IDT) instead of the IEC 60998-2-1:1990;
- with the GB/T 14048.7 low-voltage switchgear and control equipment - Part 7-1. Ancillary copper conductor terminal blocks (GB/T 14048.7-2006, IEC 60947-7-1:2002, MOD) instead of IEC 60947-7 -1. 1989;
- with the GB/T 16895.15 Electrical installations of buildings - Part 5. Selection and erection of electrical equipment Section 523. wiring system carrying capacity (GB/T 16895.15-2002, IEC 60364-5-523:1999, IDT) instead of IEC 60364 -5-523. 1983;
- with the GB 17464 Connecting devices - Electrical copper conductors screw-type and screwless type clamping safety requirements apply to more than 0.2mm² to 35mm² (including) the general requirements of the wire clamp and special requirements (GB 17464-2012, IEC 60999 -1:1999, IDT) instead of the IEC 60999:1990;
- ASTMB172-2010 with electrical wire rope with a successful bundle twist section stranded copper wire sizes;
- Because 5.4.2 references GB/T 5023.3, thus increasing the GB/T 5023.3 rated voltage of 450/750V and below PVC insulated cables Part 3 Chapter 2. Non - sheathed cables for fixed wiring (GB/T 5023.3-2008, IEC 60227-3:1997, IDT).

--- Referenced in Appendix D of IEC standards table to table the corresponding national standards.

This standard made the following editorial changes.

--- According to GB/T 1.1-2009 relevant provisions in Chapter 1, "Scope" supplemented "This standard specifies the use of any material aluminum clamp for connecting devices and aluminum clamp with copper wire classification of the device is connected, the main characteristics, construction, testing and other technical requirements. ";

--- According to GB/T 1.1-2009 relevant provisions of the IEC 61545:1996 in Table reordered in numerical order, the "Table 3A" "Table 3B" "Table 7A" "Table 7B" to "Table 3" "table 4" "table 8" "table 9" in Appendix D of the "table D.1A" "table D.2" "table D.2A"

followed by the words "table D.2" "table D.3 "" table D.4 ";

--- Remove the IEC 61545-1:1996 applies to other countries, some comments deleted Chapter 1, "Note 1" and "Note 2" to "note", and 5.5.2 and deleted 6.2 "Note";

--- As Appendix C in Figure no chart title, thus increasing the Chart Title "Figure C.1 mechanical perturbations (bending) test device (see 11.2)";

--- Appendix alphabetical order, the "Appendix J" to "Appendix I".

The standard proposed by China Electrical Equipment Industrial Association.

This standard by the National Electric annex Standardization Technical Committee (SAC/TC67) centralized.

This standard was drafted. Weikai Detection Technology Co., Ltd., Shantou City in East Asia Electric Factory, Ningboaike Lighting Co., Ltd., China Electric Apparatus Research Institute Co., Ltd., Tianjin Jiu Chen Machinery Manufacturing Co., Yuehua Holdings Limited.

1 Scope

This standard specifies the clamping member of any material connected with aluminum components and aluminum clamp with copper wire connecting devices classification, main characteristics, construction, testing and other technical requirements.

This standard applies to the product as a standalone unit or as an integral part of any material screw-type and screwless-type clamping connection devices for connection of unprocessed aluminum wire (bare aluminum or anodized aluminum) and copper Clad aluminum (in line with GB/T 3956-2008 requirements), Cross-sectional area of 2.5mm² ~ 50mm² (containing 50mm²) or equivalent AWG wire gauge size hard (single or stranded) conductors, rated AC voltage not exceeding 1000V, frequency no greater than 1000Hz and rated DC voltage does not exceed 1500V.

This standard also applies to the connection of hard copper wire (single or stranded) and flexible copper conductors (in line with GB/T 3956), 0.5mm² ~ 35mm² (containing 35mm²) or the corresponding aluminum clamp AWG wire.

This standard contains the minimum requirements applicable to the connecting wire clamping member.

This standard does not apply to the following clamps.

- a) the use of crimping, brazing, soldering, welding of the clamping member is connected;
- b) or digital signal clamp circuit;
- c) flat quick-connect terminals, insulation piercing connecting devices and twist-on connecting devices such as clamps, clamp these requirements in a separate section or in consideration.

Note: The soft aluminum wire is not in the scope of this standard, with the development of these leads will be considered.

2 Normative references

The following documents for the application of this document is essential. For cited documents with dates, only the dated edition applies to this document. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 3956-2008 conductor cable (IEC 60228:2004, IDT) GB/T 5023.3 rated voltage of 450/750V and below PVC insulated cables Part 3. Non-sheathed cables for fixed wiring (GB/T 5023.3-2008, IEC 60227-3:1997, IDT) GB 10963.1-2005 electrical accessories for household and similar circuit breakers for overcurrent protection - Part 1. for AC circuit breaker (IEC 60898-1:2002, IDT) GB 13140.1 Connecting devices for low voltage circuits for household and similar purposes with Part 1. General requirements (GB 13140.1-2008, IEC 60998-1:2002, IDT) GB 13140.2 Part 2 Connecting devices for low voltage circuits for household and similar purposes used. as a standalone unit Particular requirements for connecting devices with screw-type clamping units of (GB 13140.2-2008, IEC 60998-2-1:2002, IDT) GB/T 14048.7 low-voltage switchgear and control equipment Part 7-1. Ancillary copper conductor terminal blocks (GB/T 14048.7-2006, IEC 60947-7-1:2002, MOD) GB/T 16895.15 Electrical installations of buildings - Part 5. selection and installation of electrical equipment Section 523. wiring system carrying capacity (GB/T 16895.15-2002, IEC 60364-5-523:1999, IDT) GB 17464 Connecting devices - Electrical copper conductors screw-type and screwless type clamping safety requirements apply to more than 0.2mm² to 35mm² (including) the general requirements of the wire clamp and special requirements (GB 17464-2012, IEC 60999-1 .1999, IDT)