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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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Connection Set for Conductive Charging of Electric Vehicles—Part 1: General Requirements
电动汽车传导充电用连接装置 第 1 部分：通用要求

(English Translation)

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Connection Set for Conductive Charging of Electric Vehicles — Part 1: General Requirements

1 SCOPE

This document specifies the technical requirements for the connection set for conductive charging of electric vehicles, e.g., voltage and current ratings, appearance, structure, environmental adaptability, electrical properties, and mechanical properties, etc., and describes the inspection requirements for the connection set for conductive charging of electric vehicles, e.g., test conditions, test methods, and inspection items, etc.

This document is applicable to the AC charging connection set with a frequency of 50 Hz, a rated voltage not exceeding AC 690V, and a rated current not exceeding 250A for conductive charging of electric vehicles, and to the DC charging connection set with a rated voltage not exceeding DC 1,500V and a rated current (duration maximum current) not exceeding 1,000A.

This document doesn't apply where the plug and socket-outlet of the charging connection set uses the standard plug and socket-outlet specified in GB/T 1002 and GB/T 2099.1.

Additional requirements may be provided in such aspects as mounting position, operating conditions, service mode, and environmental adaptability when the charging connection set specified in this document is intended for the electric vehicles to be used in special occasions, e.g., water infrastructure, mining, construction site, and agricultural operations, or used for other sections than road vehicles.

2 NORMATIVE REFERENCES

The following normative documents contain provisions which, through normative reference in this text, constitute essential provision of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

GB/T 261	Determination of flash point—Pensky-Martens closed cup method
GB/T 1002	Single phase plugs and socket-outlets for household and similar purposes - Types, basic parameters and dimensions
GB/T 2099.1	Plugs and socket-outlets for household and similar purposes - Part 1: General requirements
GB/T 2423.4	Environmental testing for electric and electronic products - Part 2: Test method - Test Db: Damp heat, cyclic (12h+12h cycle)
GB/T 2423.7	Environmental testing - Part 2: Test methods - Test Ec: Rough handling shocks, primarily for equipment—type samples
GB/T 2423.22	Environmental testing - Part 2: Tests methods - Test N: Change of temperature
GB/T 2951.11	Common test methods for insulating and sheathing materials of electric and optical cables - Part 11: Methods for general application - Measurement of thickness and overall dimensions - Tests for determining the mechanical properties
GB/T 2951.12	Common test methods for insulating and sheathing materials of electric and optical cables - Part 12: Methods for general application - Thermal ageing methods
GB/T 3956	Conductors of insulated cables
GB/T 4208	Degrees of protection provide by enclosure (IP code)
GB 4943.1	Audio/video, information and communication technology equipment—Part 1: Safety requirements

GB/T 5013.4 Rubber insulated cables of rated voltages up to and including 450/750V - Part 4: Cords and flexible cables

GB/T 5023 (all parts) Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V

GB/T 5461 Edible salt

GB/T 5462 Industrial salt

GB/T 5563 Rubber and plastics hoses and hose assemblies—Hydrostatic testing

GB/T 11918.1-2014 Plugs, socket-outlets and couplers for industrial purposes—Part 1: General requirements

GB/T 11918.4-2014 Plugs, socket-outlets and couplers for industrial purposes—Part 4: Switched socket-outlets and connectors with or without interlock

GB/T 14048.5 Low-voltage switchgear and control gear—Part 5-1: Control circuit devices and switching element—Electromechanical control circuit devices

GB/T 15092.1 Switches for appliances—Part 1: General requirements

GB/T 16895.3-2017 Low-voltage electrical installations—Part 5-54: Selection and erection of electrical equipment—Earthing arrangements and protective conductors

GB/T 16935.1 Insulation coordination for equipment within low-voltage supply systems—Part 1: Principles, requirements and tests

GB/T 18487.1 Electric vehicle conductive charging system- Part 1: General requirements

GB/T 19596 Terminology of electric vehicles

GB/T 20234.2 Connection set for conductive charging of electric vehicles—Part 2: AC charging coupler

GB/T 20234.3 Connection set for conductive charging of electric vehicles—Part 3: DC charging coupler

GB/T 28046.3-2011 Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 3: Mechanical loads

GB/T 28046.4-2011 Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 4: Climatic loads

GB/T 28957.1 Road vehicles - Test dust for filter evaluation - Part 1: Silicon dioxide test dust

GB/T 29317 Terminology of electric vehicle charging/battery swap infrastructure

GB/T 33594 Charging cables for electric vehicles

3 TERMS AND DEFINITIONS

For the purpose of this document, the terms and definitions established in GB/T 11918.1-2014, GB/T 18487.1, GB/T 19596 and GB/T 29317, as well as the following apply.

3.1 charging connection set

an assembly or device used for conductive connection between the electric vehicle (EV) and the electric vehicle supply equipment (EVSE) (or external power supply)

Note 1: Charging connection set is capable of making/breaking circuit and realizing transmission of electric energy, low-voltage auxiliary power, control signals or communication data, etc.

Note 2: Charging connection set includes charging coupler, charging cable, in-cable device,

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