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

GB/T 18487.3-2001

**Electric vehicle conductive charging system AC/DC Electric
vehicle charging station
(English Translation)**

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1 Scope

This Standard, together with GB/T 18487.1, gives specific requirements (maximum A.C. voltage of 660V and maximum D.C. voltage of 1,000V in accordance with GB 156-1993) for conductive connection to A.C./D.C. electric vehicle charging station.

For A.C. charging station, this Standard does not cover box type assemblies with socket-outlets, which is installed for the purpose of delivering energy to the vehicle and have no charging control functions.

According to GB/T 18487.1, the charging mode of D.C. electric vehicle charging station shall be Mode 4.

This Standard does not cover all other safety aspects related to maintenance.

2 Normative References

The involved provisions in the following standards will become the provisions through reference in this Standard. When published, all the shown versions are valid. All the standards will be revised, and all parties using this Standard shall discuss the possibility of using the latest version.

GB/T 156-1993 Standard voltage

GB/T 2423.1-1989 Basic environmental testing procedures for electric and electronic products - Tests A. Cold (eqv IEC 60068-2-1.1 974)

GB/T 2423.2-1989 Basic environmental testing procedures for electric and electronic products Tests B. Dry heat (eqv IEC 60068-2.1974)

GB/T 2423.3-1993 Basic environmental testing procedures for electric and electronic products - Test Ca. Damp heat, steady state (eqv IEC60068-2-3.1984)

GB/T 2423.4-1993 Basic environmental testing procedures for electric and electronic products - Test Db. Damp heat, cyclic (eqv IEC60068-2-30.1980)

GB/T 2423.18-1985 Basic environmental testing procedures for electric and electronic products - Test Kb. salt mist cyclic (sodium chloride solution) (idt IEC 60068-2-52;1996)

GB/T 2423.22-1987 Environmental testing for electric and electronic products - Test N. Change of temperature (eqv IEC60068-2-14.1984)

GB/T 2423.24-1995 Environmental testing for electric and electronic products - Part 2.Test methods Test Sa. Simulated solar radiation at ground level (idt IEC 60068-2-5.1975)

GB 4208-1993 Degrees of protection provided by envelope (IP code) (eqv IEC 60529.1989)

GB/T 6113.1-1995 Specifications for radio disturbance and immunity measuring apparatus (eqv CISPR 16-1.1993)

GB/T 6113.2-1998 Methods of measurement of radio disturbance and immunity (eqv CISPR 16-2.1996)

3 Definition

Definitions in GB/T 18487.1 and the following definition apply in this Standard.

Vehicle charging control unit (VCCU)

System embedded in the electric vehicle which controls the charging parameters of the off-board charger.

4.1 A.C. charging station

A.C. electric vehicle charging station is all the equipment having special function of controlling charging and used for delivering A.C. power to the electric vehicle, which is installed in the same envelope.

A.C. electric vehicle charging station may be connected to the electric vehicle in three different connection modes.

4.2 D.C. charging station

Use supply wires and connectors to connect the charging station to the electric vehicle. The supply wires and connectors are permanently attached to the charging station in the connection mode C in GB/T 18487.1-2001.

5 Standard Conditions for Operation in Service and for

Installation

The rated value of the A.C. supply voltage is up to 660 V. The permissible voltage fluctuation shall be within $\pm 10\%$ of the nominal voltage. The rated value of the frequency is 50 Hz ± 1 Hz.

6.1 A.C. voltage/current input

The recommended value of rated voltage and rated current shall be in accordance with the national standard.

6.2 D.C. voltage/current output

The maximum permissible values of rated output voltage and current are 1000V and 400A.

7 General Test Requirements

7.1

All the tests in this Standard are type test.

7.2

Unless otherwise specified, type test shall be carried out on a single specimen as delivered and configured in accordance with the manufacturer's instructions.

7.3

Unless otherwise specified, the tests shall be carried out in the order of the clauses and subclauses in this Standard.

7.4

The tests shall be carried out with the specimen or any movable part of it placed in the most unfavourable position which may occur in normal use.

7.5

The tests shall be carried out in a draught open location and in general,

7.6

The parameters of the 50Hz A.C.

8.1 Control functions

For mode 3 charging, the electric vehicle charging station shall provide the control functions listed in 6.2 of GB/T 18487.1-2001

8.2 Safety connection check

Continuously check the earthing connection. Charging is permissible only when the electric vehicle is in intact and correct connection.

8.3 Emergency service

An emergency disconnection device shall be installed to isolate the A.C./D.C. electric vehicle charging station to turn off the A.C.

8.4 Permissible temperature

The maximum permissible surface temperature of parts of the A.C./D.C. electric vehicle charging station which are hand touched, at an ambient temperature of 40°C, shall be.

8.6 Location of connectors

The lower part of the plug-socket installed (case A and B connections) shall be located at a height between 0.4 m and 1.5 m above the ground.

Connector sheath shall be provided if connection mode C is adopted. The riding position of the connectors after charging is finished shall meet the previous requirements. The D.C. electric vehicle charging station shall provide a method to indicate whether the connectors are in right position after disconnection.