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

GB/T 38775.8-2023

**Electric vehicle wireless power transfer - Part 8: Specific
requirements of commercial vehicle**

电动汽车无线充电系统 第8部分：商用车应用特殊要求

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Foreword

This document was issued on 7 September 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 7 September 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 38775.8-2023 is the part of the electric vehicle wireless power transfer series that sets out what changes when the vehicle is a commercial one - a bus, a truck or a similar platform charged while parked over a ground pad by magnetic coupling. The signs and abbreviations clause fixes the quantities used, among them the minimum output voltage the load will accept, and the general clause gives the system framework and the classification of commercial vehicle systems. Requirements are written stage by stage across a charging session - the preparation before charging, the start-up, the transfer itself and the stop - with safety conditions referred back to the base parts. Test preparation takes as much room as the tests: the working frequency is fixed, the alignment tolerance area and its centre alignment point are laid out, the output voltage measurement point is chosen and the test devices positioned. The test methods follow the same stages, and informative annexes describe the ground and in-vehicle equipment and give a record table for the system efficiency test. A heavy vehicle parks with less precision and sits at a greater, more variable clearance than a car, so an efficiency figure measured only at perfect alignment says little about a depot. For pad and system suppliers, vehicle makers, fleet depots and test houses.

This Document specifies special requirements for commercial vehicle applications of electric

vehicle wireless charging systems.

This Document applies to static magnetic coupling wireless charging systems for electric commercial vehicles with a power level exceeding 22kW. The maximum rated voltage of the power supply is 1500V (DC), and the maximum rated output voltage is 1500V (DC). Other rated output voltages are implemented by reference.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

GB/T 19596 Terminology of Electric Vehicles

GB/T 38775.1-2020 Electric vehicle wireless power transfer - Part 1: General requirements

GB/T 38775.3-2020 Electric vehicle wireless power transfer - Part 3: Specific

requirements

GB/T 38775.4-2020 Electric vehicle wireless power transfer - Part 4: Limits and test

methods of electromagnetic environment

GB/T 38775.5-2021 Electric vehicle wireless power transfer - Part 5: Electromagnetic

compatibility requirements and test methods

GB/T 38775.6-2021 Electric vehicle wireless power transfer - Part 6: Interoperability

requirements and testing - Ground side

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 19596, GB/T 38775.1-2020, and GB/T 38775.3-2020 and the following apply.

3.1 Commercial vehicle

A vehicle that is designed and technically designed to transport people and goods.

NOTE: Commercial vehicles can tow trailers, but passenger vehicles are not included.

[SOURCE: GB/T 3730.1-2001, 2.2.2, with modifications]

3.2 Ground clearance

The minimum vertical distance between the lower surface of the in-vehicle equipment and the

ground.

3.3 System efficiency

The ratio of the output power of in-vehicle equipment to the input power of ground equipment.

3.4 Alignment tolerance area

When the ground clearance of the secondary side equipment is determined, the area that MF-

WPT system can meet the interoperability requirements for wireless power transmission in the

X-axis and Y-axis directions.

[SOURCE: GB/T 38775.6-2021, 3.10]

3.5 Center alignment point

The geometric center point that aligns the tolerance area.

[SOURCE: GB/T 38775.6-2021, 3.8]

4 Signs and Abbreviations

4.1 Signs

The following signs apply to this Document.

U_{out-min}: The minimum charging voltage required by the load, that is, the minimum output voltage of the MF-WPT system.

U_{out-max}: the maximum charging voltage required by the load, that is, the maximum output voltage of the MF-WPT system.

U_{out-nom}: The rated voltage required by the load, that is, the rated output voltage of the MF-WPT

system.

center alignment point of the ground equipment.

6 Requirements

6.1 Requirements for the preparation stage before charging

The safety test results of the commercial vehicle MF-WPT system shall comply with the relevant provisions of Clause 10 and 12.3 of GB/T 38775.1-2020; 5.8.6 of GB/T 38775.3-2020;

and Clauses 4 and 5 of GB/T38775.4-2020; as well as Clauses 6 and 7 of GB/T 38775.5-2021.

6.2 Requirements for charging start-up phase

The commercial vehicle MF-WPT system shall meet the following conditions before it can enter the charging state:

- a) The initial alignment pre-check is completed, and the primary side equipment and secondary side equipment are within the rechargeable area;
- b) Pass the pairing pre-check;