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GB/T 46148-2025

Technical Specification for Electric Vehicle Intelligent Bi-  
Directional Power Supply Equipment  
电动汽车智能充放电设备技术规范

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# Technical Specification for Electric Vehicle Intelligent Bi-Directional Power Supply Equipment

## 1 SCOPE

This document specifies the classification, equipment composition, operating conditions, functional requirements, safety requirements and performance requirements with respect to the EV intelligent bi-directional power supply equipment, and describes the corresponding test methods.

This document is applicable to the EV intelligent bi-directional power supply equipment between the EV and the power grid [hereinafter referred to as "charging and discharging equipment (CDE)"], which has a rated voltage up to 1,000 V AC or 1,500 V DC at the power grid side and a rated maximum voltage up to 1,000 V AC or 1,500 V DC at the EV side.

This document is applicable to the DC bi-directional power supply equipment permanently attached to the power grid side in charging mode 4 and the AC bi-directional power supply equipment in charging mode 3 and case C connection as specified in GB/T 18487.1-2023.

This document only applies to the grid-connected charging and discharging equipment.

This document does not apply to the charging and discharging equipment connected to the isolated grid.

## 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 12325	Power quality - Deviation of supply voltage
GB/T 12326	Power quality - Voltage fluctuation and flicker
GB/T 14549	Quality of electrical energy supply--Harmonics in public power grid
GB/T 15543	Power quality - Three-phase voltage unbalance
GB/T 15945	Power quality - Frequency deviation for power system
GB/T 18487.1-2023	Electric vehicle conductive charging system—Part 1: General requirements
GB/T 18487.5-2024	Electric vehicle conductive charging system—Part 5: DC charging system for GB/T 20234.3
GB/T 20840.2	Instrument transformers—Part 2: Additional requirements for current transformers
GB/T 20840.3	Instrument transformers—Part 3: Additional requirements for inductive voltage transformers
GB/T 24337	Power quality - Interharmonics in public power grid
GB/T 29317-2021	Terminology of electric vehicle charging/battery swap infrastructure
GB 39752-2024	Safety requirements of electric vehicle conductive supply equipment
GB/T 40432-2021	Conductive on-board charger for electric vehicles
GB 44263-2024	Safety requirements for electric vehicle conductive charging system
NB/T 33001	Specification for electric vehicle off-board conductive charger
NB/T 33002	Specification for electric vehicle AC charging spot
NB/T 33008.1	Inspection and test specifications for electric vehicle charging



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