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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 18487.5-2024

Electric Vehicle Conductive Charging System —Part 5: DC Charging System for GB/T 20234.3

电动汽车传导充电系统 第 5 部分：用于 GB/T 20234.3 的直流充电系统

(English Translation)

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CONTENTS

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1 SCOPE

This document specifies the general requirements, control pilot circuit, charging control process and charging connection control timing sequence of the EV DC charging system intended for the DC charging coupler set out in GB/T 20234.3, and other requirements for the charging system, e.g., insulation monitoring device (IMD), additional protective measures, and protection against power outage, etc.

This document is applicable to the DC charging system, comprising the electric vehicle (referred to as “vehicle” or “EV”) and the off-board conductive charger (referred to as “off-board charger” or “charger”), of which the digital communication protocol complies with the requirements of GB/T 27930.2.

This document is applicable to the off-board conductive charger using an isolated system, which has a rated voltage up to AC 1,000 V or DC 1,500 V on the supply network side and a maximum operating voltage up to DC 1,500 V on the vehicle side.

Note 1: The recommended DC operating voltage range is 200V to 1,000V at the vehicle coupler of off-board conductive charger for locations with non-restricted access.

This document is applicable to the DC charging system whose vehicle power supply circuit is voltage class B circuit, while this document may be used as a reference for the DC charging system whose vehicle power supply circuit is voltage class A circuit.

Note 2: See GB 18384 for the definition of voltage class.

Note 3: When the DC charging system specified in this document are used in other sectors such as electric industrial vehicles, electric construction machinery, etc., additional requirements are required usually for the charging system, e.g., re-evaluating the important characteristics of the charging system such as short-circuit protection, Y-capacitor, insulation resistance, IMD, etc.

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 13870.1-2022	Effects of current on human beings and livestock-Part 1: General aspects
GB/T 13870.2-2016	Effects of Current on Human Beings and Livestock - Part 2: Special Aspects
GB 14050	Types and safety technical requirements of system earthing
GB/T 14285	Technical code for relaying protection and security automatic equipment
GB/T 18487.1-2023	Electric vehicle conductive charging system-Part 1: General requirements
GB/T 19596	Terminology of Electric Vehicles
GB/T 20234.1-2023	Connection set for conductive charging of electric vehicles-Part 1: General requirements
GB/T 20234.3	Connection set for conductive charging of electric vehicles-Part 3: DC charging coupler
GB/T 27930.2	Digital communication protocols between off-board conductive charger and electric vehicle—Part 2: Communication protocols for GB/T 20234.3
GB/T 29317	Terminology of Electric Vehicle Charging/Battery Swap Infrastructure

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