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

GB/T 37863.1-2019

**Railway applications - Traction electric drive systems - Part 1:
Urban rail vehicles**

轨道交通 牵引电传动系统 第1部分：城轨车辆

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Foreword

GB/T 37863 "railway traction electric drive system" is divided into two parts.

--- Part 1. Urban rail vehicles;

--- Part 2. Locomotives, EMUs. This part is the first part of GB/T 37863. This part is drafted in accordance with the rules given in GB/T 1.1-2009. This part is proposed by the National Railway Administration. This part is under the jurisdiction of the National Traction Electrical Equipment and Systems Standardization Technical Committee (SAC/TC278). This section drafted by: CRRC Zhuzhou Electric Locomotive Research Institute Co., Ltd., CRRC Qingdao Sifang Locomotive and Rolling Stock Co., Ltd., CRRC Zhuzhou Electric Locomotive Co., Ltd., Beijing Metro Operation Co., Ltd., Guangzhou Metro Group Co., Ltd. The main drafters of this section. Chen Wenguang, Jie Peijin, Xiao Yujuan, Shang Jiangao, Xu Huilin, Lu Jinsong. Rail transit traction drive system Part 1. Urban rail vehicles

1 Scope

Part 1 of China's national standard for railway traction electric drive systems, covering urban rail vehicles. It specifies the terms and definitions, the abbreviations, the conditions of use, the system composition, the technical requirements and the test methods. The traction drive is the chain from the current collector to the wheel: the line filter, the traction converter, the motors and the control that coordinates them. For a metro vehicle its design is dominated by the duty cycle rather than by peak power. A metro train accelerates hard, runs for ninety seconds, brakes hard and stops, and repeats that a thousand times a day - so the equipment is thermally cycled continuously, the braking energy is a large fraction of the traction energy and is worth recovering, and the wheel slip control has to work on rails

that are wet, greasy and in tunnels. Reliability is judged in a way peculiar to the application: a failed train in a tunnel blocks the whole line behind it.

This part of GB/T 37863 stipulates the use conditions, system composition and technical requirements of the traction electric drive system of urban rail transit vehicles.

Requirements, test methods, inspection rules. This section applies to DC750V, DC1500V, DC3000V and energy storage system powered by AC traction rotary motor driven city Traction electric drive system of rail transit vehicles (hereinafter referred to as traction electric drive system), traction electric drive system of other types of vehicles can refer to carried out.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 2900.36 Electrotechnical terminology electric traction

GB/T 4208-2017 enclosure protection grade (IP code) General technical conditions for

GB/T 7928 subway vehicles

GB/T 14894-2005 Inspection and test rules for assembly of urban rail transit vehicles

GB/T 21413.1-2018 Electrical equipment for railway rolling stock -- Part 1 . General conditions and general rules

GB/T 21413.2 Railway applications - Electrical equipment for rolling stock - Part 2. General rules

GB/T 21413.3 Railway applications - Electrical equipment for rolling stock - Part 3

GB/T 21413.5 Electrical equipment for railway applications - Part 5. Rules for high-voltage fuses for electric equipment

GB/T 21414 Regulations for the protection of electrical hazards in railway applications

GB/T 21562 Rail transit reliability, availability, maintainability and safety specifications and examples

GB/T 21563 Rail Vehicle Locomotive Equipment Impact and Vibration Test

GB/T 23431 General technical conditions for urban light rail transit articulated vehicles

GB/T 24338.3 Electromagnetic compatibility of rail transit Part 3-1. Locomotive trains and vehicles