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**Railway applications - Converters on board rolling stock -
Auxiliary converters for suburban railway vehicles**

轨道交通 机车车辆变流设备 市域铁路和城轨交通车辆辅助变流器

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and Definitions	2
4 Abbreviations	2
5 Conditions of use	2
6 System Configuration	3
7 Technical Requirements	3
8 Test methods	9
9 Inspection Rules	13
10 Marking, packaging, transportation and storage	14

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed and coordinated by the National Rail Transit Electrical Equipment and System Standardization Technical Committee (SAC/TC278). This document was drafted by: Zhuzhou CRRC Times Electric Co., Ltd., China Railway Inspection and Certification Zhuzhou Traction Electrical Equipment Inspection Station Co., Ltd. CRRC Qingdao Sifang Rolling Stock Research Institute Co., Ltd., CRRC Dalian Electric Traction Research and Development Center Co., Ltd., CRRC Yongji Electric Motor Co., Ltd., Beijing Zongheng Electromechanical Technology Co., Ltd., CRRC Dalian Locomotive and Rolling Stock Co., Ltd., and CRRC Tangshan Locomotive and Rolling Stock Co., Ltd. The main drafters of this document are: Rao Peinan, Zhao Qingliang, Zhou Shuai, Rao Dongjie, Yi Tao, Wang Changliang, Zeng Fanfei, Wang Xuyang, Jiang Tao, Jiang Xinsheng, Wang, Y.X., Hao, H.F., and Liu, Y. Railway transportation locomotive and vehicle inverter equipment Auxiliary converter for urban rail and urban rail transit vehicles

1 Scope

China's national standard for the auxiliary converters of suburban railway vehicles. It extends the series that covers locomotives, multiple units and urban rail to the suburban

case, which sits between the metro and the main line and shares the awkward properties of both. A suburban train stops frequently like a metro, so its auxiliary load is dominated by door operation, lighting and the air conditioning that must recover after every door opening; and it runs long distances between city and outer suburb like a main line service, often across an electrification boundary. The auxiliary converter has to supply the vehicle's own systems through all of that, including the periods when the pantograph is down at a neutral section, which means the battery and the converter's behaviour during the gap are as much a part of the specification as its rated output.

This document specifies the use conditions, system composition, technical requirements, Test methods, inspection rules, marking, packaging, transportation and storage. This document is applicable to auxiliary converters of urban (suburban) railway vehicles and urban rail transit vehicles using DC power supply.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 1402-2010 Voltage of rail transit traction power supply system

GB/T 2423.1-2008 Environmental testing for electric and electronic products Part

3 Design requirements

GB/T 28029.1 Rail transit electronic equipment Train communication network (TCN) Part

4 Ethernet group network (ECN)

GB/T 32347.1-2015 Environmental conditions for rail transit equipment Part