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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 19842-2025

Replacing GB/T 19842-2005

Air conditioning units for railbound vehicles

轨道车辆空调机组

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Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting is scheduled.

This document replaces GB/T 19842-2005 "Air Conditioning Units for Rail Vehicles". Compared with GB/T 19842-2005, except for structural adjustments and...

Aside from editorial changes, the main technical changes are as follows.

a) The scope of the standard has been changed (see Chapter 1, Chapter 1 of the 2005 edition);

b) Added the terms cooling energy efficiency ratio, heating performance coefficient, unit air-side air tightness, and unit air-side water tightness and their definitions; deleted...

In addition to the term "emergency ventilation" and its definition (see Chapter 3, Chapter 3 of the 2005 edition);

c) The classification method by "usage climate ambient temperature" has been changed; a classification method by usage altitude has been added (see 4.1, 2005). Version 4.1);

d) The test condition table has been revised (see Table 1, Table 3 in the 2005 edition).

e) Added general requirements for high-altitude prototype units (see 5.1.11);

f) The requirements for the sealing performance of the refrigeration system have been changed (see 5.2, 5.6.1 in the 2005 edition).

g) The performance requirements and test methods for the air tightness of the unit's air side have been changed (see 5.3 and 6.5, 5.6.4 and 7.3.4 in the 2005 edition).

h) The performance requirements and test methods for the air-side watertightness test of the unit have been changed (see 5.4 and 6.6, 2005 edition). 5.6.3, 7.3.3);

i) Performance requirements and test methods for dielectric strength and high-altitude impulse withstand voltage have been added (see 5.7, 5.24 and 6.9, 6.26).

j) Added requirements and test methods for the fault protection performance of the refrigeration system (see 5.8 and 6.10);

k) The limits for the cooling energy efficiency ratio of products under nominal operating conditions have been changed (see Table 2, Table 1 in the 2005 edition).

l) The maximum operating cooling performance requirements and test methods have been changed (see 5.10, 6.12, 5.6.10 and 7.3.10 in the 2005 edition).

m) Added performance tests for undervoltage and overvoltage start-up under maximum operating cooling conditions and undervoltage and overvoltage start-up under maximum operating heating conditions of the heat pump.

Requirements and test methods (see 5.11, 5.15, 6.13, 6.17).

n) The maximum operating heating performance requirements and test methods have been changed (see 5.14, 6.16, 5.6.13 and 7.3.14 in the 2005 edition).

o) Change the performance requirements and test methods for automatic defrosting tests (see 5.16, 6.18, 5.6.14 and 7.3.15 in the 2005 edition);

p) Specific requirements and test methods for the safety test of electric heaters have been added (see 5.17, 6.19);

q) Noise requirements and test methods have been changed (see 5.19, 6.21, 5.6.15 and

7.3.16 in the 2005 edition).

r) The performance requirements and test methods for cooling at low ambient temperatures have been changed (see 5.20, 6.22, 5.6.12 and 7.3.12 in the 2005 edition).

s) Added requirements and test methods for cooling at ultra-low ambient temperature and heating at low ambient temperature (see 5.21, 6.23, 5.22, 6.24).

t) The performance requirements and test methods for the surface temperature of the electric heater have been increased (see 5.25, 6.27);

u) Added shock and vibration requirements and test methods (see 5.26, 6.28);

v) Added electromagnetic compatibility performance requirements and test methods (see 5.27, 6.29);

w) Added marking and packaging requirements for units using flammable refrigerants [see 8.1.1f)].

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Refrigeration and Air Conditioning Equipment (SAC/TC 238).

This document was drafted by: Hefei General Machinery Research Institute Co., Ltd., Bingshan Songyang Compressor (Dalian) Co., Ltd., and CRRC Tangshan Locomotive Co., Ltd.

Vehicle Co., Ltd., Hefei General Machinery & Electrical Products Testing Institute Co., Ltd., and China National Machinery General Machinery Technology Co., Ltd.

The main drafters of this document are: Zhou Quan, Li Yayun, Liu Yuhuan, Ma Qingjun, Zhang Xiuping, Ding Yong, Dai Lin, Liu Yuxuan, He Junqian, and Li Ziye.

This document was first published in 2005, and this is its first revision.

Rail vehicle air conditioning units

1 Scope

This document specifies the types and basic parameters, technical requirements, test methods, and inspection procedures for air conditioning units in rail vehicles (hereinafter referred to as "units").

Rules, as well as marking, packaging, transportation and storage.

This document applies to air conditioners used in railway passenger cars and EMU trains,

intercity rail transit vehicles, urban express line vehicles, and urban rail transit vehicles.

This is a set of units. Other similar units can be used as a reference.

2 Normative references

GB/T 191

GB/T 311.1-2012

GB/T 755

GB 2894-2025

GB/T 4208-2017

GB/T 4706.32

GB/T 6388

GB/T 9237

GB/T 13306

GB/T 14597

GB/T 16935.1

GB/T 17758-2023

GB/T 20626.1

GB/T 21413.1

GB/T 21562.2-2015

GB/T 21563

GB/T 24338.4

GB/T 26572