

ICS 45.060
CCS S 04



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

GB/T 28027-2011

**Railway applications -- Technical criteria for the coordination
between power supply and rolling stock to achieve
interoperability**

轨道交通 供电系统和机车车辆运行匹配

(English Translation)

Issued on: October 31, 2011

Implemented on: April 1, 2012

Issued by: Standardization Administration of China

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard uses the redrafted law revision adopted IEC 62313:2009 "Rail power supply system and power supply system for rolling stock (Substation) and rolling stock to run matching technical guidelines. " this standard and IEC 62313:2009 technical differences exist, these differences involve the terms of the margin with a single vertical line (-) into Row marked. This standard and IEC 62313:2009 technical differences and their reasons

are as follows.

- Chapter 1 Scope, according to national circumstances will be divided into a main line railway line and urban rail transport;
- Table 1 for AC drive and DC drive train are classified based on the current actual experience domestic motorcycle manufacturers in the note b the detected total average power factor λ claim adjusted to 0.80;
- Country there is only 50Hz power frequency, so in Tables 2 and 5 to delete the content 16.7Hz, 60Hz deleted Table 5 related content;
- There is no domestic AC15000V, DC3000V, so in Tables 2 and 3 deleted AC15000V, DC3000V related content;
- Table 3 for AC drive and DC drive train classification.

This standard also made the following editorial changes.

- Modify the standard name to fit the habits of domestic industry, the standard name will be changed to "rail power supply systems and rolling stock to run Match ", the corresponding English name from "Railway applications-Power supply and rolling stock-Technical criteria for the coordination between power supply (substation) and rolling stock "to "Railway applications-Technical criteria for the coordination between power supply and rolling stock to achieve interoperability ";
- Chapter 2 GB/T 25890.1 only informative appendix appears, it changed references;
- Chapter 2 GB/T 2900.36-2003 reference to the term identity, instead references;
- Fixed table referenced in the original 14.4 Error table 4 (table 3 should be), and the three tables numbered Tables 7 to 9;
- In the informative Appendix G, according to the actual situation of the domestic power supply system AC25kV maximum short circuit current to 25kA;
- Deleted the original data Appendix I and references.

The standard proposed by the People's Republic of China Ministry of Railways.

This standard by the national electric traction equipment and systems Standardization Technical Committee (SAC/TC278) centralized.

This standard is mainly drafted by. China Railway Siyuan Survey and Design Group Co., Ltd.

This standard is involved in the drafting unit. China Railway Third Survey and Design Institute Group Corporation, China Railway Engineering Consulting Group Co., Ltd., China Railway Electrical Power Design Institute Limited.

1 Scope

This standard requires the acceptance of the rolling stock equipment, mainly related to the following aspects.

- Coordination between the principle of protection of the power supply system and the traction unit, in particular, is to identify short-circuited;
- Coordination installed power lines between the power demand of the train;
- Traction unit regenerative braking and power supply system to accept coordination between;
- Coordination harmonic characteristics.

This standard interface definition and the power supply quality requirements between the tractor unit and ground equipment.

The standard in the "Power System" framework provides the interface between the rolling stock and ground power unit for traction. Pantograph and the interaction between the catenary pantograph and "control - command" (especially signal) interaction between subsystems not covered by this standard norm Around inside.

Requirements are described in the following line categories.

- Trunk railway;
- Urban Rail Transit.

Note:

- Trunk railway including various types of high-speed and conventional railway;
- Urban rail transportation including trams, light rail, subway systems.

This standard does not apply to rolling stock infrastructure management sector has received. But in the new facilities, infrastructure management Sector could develop a protocol to recognize the existing rolling stock.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 1402-2010 rail traction power supply system voltage (IEC 60850:2007, MOD) IEC 61133:2006 Railway Vehicles assembled railway facilities and operation of the vehicle before the test

(Railwayapplication-Rolingstock-Testingofrolingstockoncompletionofconstructionandbeforee

ntryintoservice)

3 Terms and Definitions

The following terms and definitions apply to this document.

High-speed railway highspeedline New or rebuilt speed target value is greater than or equal to 200km/h lines.

Conventional railroad conventionalline Conventional cargo and passenger line line, not a
3.1 high-speed rail.