

ICS 45.060

CCS S 04



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

GB/T 28807-2012

**Railway applications -- Compatibility between rolling stock and
train detection systems**

Issued on: November 5, 2012

Implemented on: February 1, 2013

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic 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 translation method identical with IEC 62427.2007 "rail rolling stock and train detection system compatibility."

Consistency correspondence with this standard Normative documents of the following documents.

--- GB/T 1402-2010 rail traction power supply system voltage (IEC 60850.2007, MOD);

--- GB/T 27025-2008 testing and calibration laboratories General requirements (ISO /IEC 17025.2005, IDT).

This standard made the following editorial changes.

--- Remove IEC 62427.2007 Introduction, paragraph 2, the European railway rolling stock and train detection systems electromagnetic compatibility notes;

--- 3 footnote to the list in Table 1;

--- The reference document IEC 62278 was adjusted to IEC 62278.2002, by 4.9 cited specific provisions.

--- Original 7.2 to the next level number only 7.2.1, does not comply with the rule number, so the suspension segment increased 7.2 number "7.2.1 General"

Original 7.2.1 to 7.2.2, a similar number of other sub-level changes, editorial changes to treatment with 7.3 7.2;

--- Appendix B only one chapter number, so the cancellation number B.1;

--- Appendix C is only one chapter number, so the cancellation number C.1;

--- Increased by reference.

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. Zhuzhou CSR Times Electric Co., Ltd., Beijing Research and Design Institute whole way communication signals.

Units involved in the drafting of this standard. CSR Qingdao Sifang Locomotive Co., Ltd., China CNR Datong Electric Locomotive Co., Ltd.

the company.

Introduction

This standard gives the rolling stock to run on a particular line of work does not interfere with the train detection system processes.

And electromagnetic compatibility is determined by the physical aspects. Electromagnetic compatibility EMC, the maximum permissible level of interference not only common values, and

The need to establish a simple method to determine the work that can be allowed on the specified line interference levels.

The main factor interfering follows.

- Current track;
- Field;
- Voltage difference between the axles.

As shown in Figure 1.

FIG. 1 source of electromagnetic interference

Electromagnetic sensitivity of the actual system is determined by the following factors.

- Single device system electromagnetic sensitivity;
- Use the device, the system configuration.

Related matters track circuits and axle counter or wheel detection system separate study.

To determine the electromagnetic sensitivity train detection system proposed laboratory/simulation test method and the "real line" Test Method, mold

Quasi most adverse conditions. According to experience, the use of specific test areas and test the required evidence. According to the experience of the railway, the establishment of this standard is determined

General Method electromagnetic sensitivity train detection system viable.

Before measuring the interference of rolling stock, the relevant staff should have extensive knowledge of the circuit power equipment, namely car static converter frequency

conversion

Rate, the power converter to adjust the type, the resonant frequency of each filter, the power supply over/under voltage operating limits, demotion work mode.

Rail

Compatibility between rolling stock and train detection systems

1 Scope

This standard describes the mutual recognition of rolling stock in a particular line required to run the program, describes the interference current, electromagnetic train detection system

Sensitivity, traction power supply characteristics and methods of measurement procedures. The results of the accreditation process to become "compatibility case" has a canonical format to meet

Proof of the compatibility criteria.

Approval procedure also applies to affect the compatibility of rolling stock, traction power supply or improve train detection system.

Compatibility is limited to the scope of the case to prove rolling stock and train detection systems characteristics (ie limits) compatibility. This standard train detection

System involves only track circuits or wheel detector.

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 21562-2008 rail reliability, availability, maintainability and safety norms and examples (IEC 62278.

2002, IDT)

ISO /IEC 17025 General requirements for testing and calibration laboratories
(General requirements for the competence of
testing and calibration laboratories)

IEC 60850 Rail Traction system supply voltage
(Railway applications-Supply voltages of traction

systems)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

Accreditation department accepting body

Compatibility case evaluation and approval certificate issued by the responsible departments, the authorities designated by national regulations.

3.2

Compatibility Case compatibility of case

Records prove prescribed railway line or provision in railroad rolling stock, traction power supply and the degree of compatibility between train detection systems document.

3.3

Approval certificate certificate of acceptance

Approved department signed acceptance of the compatibility case, allow new or improved systems in use certificates. Its relationship with the law by the state determine.

3.4

Degraded Mode degraded modes

Design preset mode Locomotive failure. Degraded mode generally allow rolling stock to complete its journey.