PD CLC/TS 50238-3:2022

BSI Standards Publication

Railway applications — Compatibility between rolling stock and train detection systems

Part 3: Compatibility with axle counters

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National foreword

This Published Document is the UK implementation of CLC/TS 50238-3:2022. It supersedes PD CLC/TS 50238-3:2019, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/9/1, Railway Electrotechnical Applications - Signalling and communications.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Railway applications - Compatibility between rolling stock and train detection systems - Part 3: Compatibility with axle counters

Applications ferroviaires - Compatibilité entre le matériel roulant et les systèmes de détection des trains - Partie 3: Compatibilité avec les compteurs d'essieux

Bahnanwendungen - Kompatibilität zwischen Fahrzeugen und Gleisfreimeldesystemen - Teil 3: Kompatibilität mit Achszähler

This Technical Specification was approved by CENELEC on 2021-12-21.

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European foreword

This document (CLC/TS 50238-3:2022) has been prepared by CLC/SC 9XA “Communication, signalling and processing systems”, of Technical Committee CLC/TC 9X “Electrical and electronic applications for railways”.

This document supersedes CLC/TS 50238-3:2019.

CLC/TS 50238-3:2022 includes the following significant technical changes with respect to CLC/TS 50238-3:2019:

— any normative references to the ERA document ERA/ERTMS/033281 have been removed;

— amended and new limits in Annex A.

This document is Part 3 in the following series:

— EN 50238-1, *Railway applications – Compatibility between rolling stock and train detection systems – Part 1: General*;

— CLC/TS 50238-2, *Railway applications – Compatibility between rolling stock and train detection systems – Part 2: Compatibility with track circuits*;

— CLC/TS 50238-3, *Railway applications – Compatibility between rolling stock and train detection systems – Part 3: Compatibility with axle counters*.

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Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

This document defines the interference limits and evaluation criteria for electromagnetic compatibility between rolling stock and axle counter detectors.

The limits have been defined on the basis of a test specification defined in EN 50617-2[1] (laboratory tests).

This document defines:

— a set of interference limits for magnetic fields resulting from both rail current and equipment on board the vehicles;

— evaluation criteria to verify rolling stock emissions and demonstrate compatibility with the interference limits for magnetic fields;

— traceability of requirements (type of axle counter detectors considered for the limits).

In the relevant frequency range of the axle counter detectors, the magnetic field is dominant and only this type of field is considered. Experience has shown that the effects of electric fields are insignificant and therefore not considered.

1 Scope

For the purpose of demonstrating compatibility between rolling stock and axle counters, this document defines the interference limits for axle counter detectors and evaluation methods to verify rolling stock emissions.

Wheel sensors and crossing loops are not covered by this document.

For wheel sensors and wheel detectors in other applications than axle counters but utilizing the same sensors on the rail and detection circuits, transient and continuous interference can be considered as equivalent to axle counter detectors or axle counter sensors.

This document gives recommended individual limits to be applied to establish compatibility between RST and all selected types of axle counter detectors, including several covered by national standards.

The list of selected types of axle counter detectors and their limits for compatibility are drawn on the basis of established performance criteria.

To ensure adequate operational availability, it is essential that the rolling stock complies with the defined limits; otherwise, the established availability of the valid output function of axle counter detectors could be compromised. The influences from metal parts or inductively coupled resonant circuits on the vehicle, eddy current brakes or magnetic brakes, are not covered by this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50238-1, *Railway applications - Compatibility between rolling stock and train detection systems - Part 1: General*

EN 50592, *Railway applications - Testing of rolling stock for electromagnetic compatibility with axle counters*

EN 50617-2:2015 [1] , *Railway Applications – Technical parameters of train detection systems for the interoperability of the trans-European railway system – Part 2: Axle counters*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 50238-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1.1
axle counter detector
detector consisting of the axle counter sensor and of the detection circuit, which includes in general filters and rectifiers

[SOURCE: EN 50617-2:2015[1], 3.1.2]

[1] As impacted by the corrigendum EN 50617-2:2015/AC:2016.