ICS 29.280 SLOVENSKÁ TECHNICKÁ NORMA December 2024

STN	**Dráhové aplikácie Technické parametre systémov na detekciu vlaku na účely interoperability transeurópskeho železničného systému Časť 2: Počítače náprav**	**STN EN 50617-2 34 2614**

Railway applications - Technical parameters of train detection systems for the interoperability of the trans-European railway system - Part 2: Axle counters

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This standard includes the English version of the European Standard.

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English Version

Railway applications - Technical parameters of train detection systems for the interoperability of the trans-European railway system - Part 2: Axle counters

Applications ferroviaires - Paramètres techniques des systèmes de détection des trains pour l'interopérabilité du système ferroviaire transeuropéen - Partie 2 : Compteurs d'essieux

Bahnanwendungen - Technische Parameter von Gleisfreimeldesystemen für die Interoperabilität des transeuropäischen Eisenbahnsystems - Teil 2: Achszähler

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European foreword

This document (EN 50617-2:2024) has been prepared by CLC/SC 9XA “Communication, signalling and processing systems” of CLC/TC 9X “Electrical and electronic applications for railways”.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2025-09-23
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2027-09-23

This document supersedes EN 50617-2:2015 and all of its amendments and corrigenda (if any).

EN 50617-2:2024 includes the following significant technical changes with respect to EN 50617-2:2015:

— Annex D: new informative annex for intermodulation effects potentially affecting the compatibility limits for Rolling Stock

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document is Part 2 of the EN 50617 series, which consists of the following parts under the common title “*Railway Applications - Technical parameters of train detection systems*”:

— Part 1: Track circuits;

— Part 2: Axle counters.

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

The working group SC9XA WGA4-2 has developed the limits for electromagnetic compatibility between rolling stock and individual train detection systems, specifically track circuits and axle counter systems and correspondingly published two technical specifications CLC/TS 50238-2 and CLC/TS 50238-3. These limits and associated measurement methods are based on preferred existing systems (as defined in CLC/TS 50238-2 and CLC/TS 50238-3) which are well established and still put forward for signalling renewals by infrastructure managers.

To meet the requirements for compatibility between train detection systems and rolling stock in the future and to achieve interoperability and free movement within the European Union, ERA/ERTMS/033281 defines the relevant parameters for compatibility of rolling stock with track circuits and axle counter systems.

The train detection systems, track circuits and axle counters are an integral part of the CCS trackside subsystem in the context of the Rail Interoperability Directive. The relevant technical parameters are enumerated in the CCS and LOC&PAS TSI and ERA/ERTMS/033281. ERA/ERTMS/033281 specifies the relevant parameters for rolling stock for compatibility with the infrastructure. This document covers all relevant technical parameters of train detection systems (axle counter) in a manner that provides a presumption of conformity with interoperability requirements, but is not limited to interoperable lines. This document refers whenever needed to ERA/ERTMS/033281. Although the demand for FrM is driven by Interoperability requirements, it is independent from the drive to introduce systems like ERTMS level 3 or level 2.

This document is based on the current understanding of the railway experts represented at WGA4-2 that track circuits and axle counter systems will continue to be the essential two train detection systems for the foreseeable future.

The published specification EN 50592 can be used to ascertain conformity of rolling stock with the FrM presented in ERA/ERTMS/033281.

The published specification CLC/TS 50238-3 can be used to ascertain conformity of rolling stock with existing individual axle counter detectors.

In this document, the defined parameters are structured and allocated according to their basic references as follows:

— axle counter system parameters;

— train based parameters;

— track based parameters;

— environmental and other parameters.

Where possible, the parameters as defined are consistent with other European Standards.

Each parameter is defined by a short general description, the definition of the requirement, the relation to other standards and a procedure to show the fulfilment of the requirement as far as necessary. An overview of the safety relevance of each parameter is given – in the context of this document – in a separate table.

1 Scope

This document specifies parameters for the design and usage of axle counter systems.

For this, this document specifies the technical parameters of axle counter systems associated with the magnetic field limits for RST in the context of interoperability. In addition, test methods are defined for establishing the conformity and the performance of an axle counter detector.

This document is intended to be used to assess compliance of axle counter systems and other forms of wheel sensors used for train detection, in the context of the European Directive on the interoperability of the trans-European railway system and the associated technical specification for interoperability relating to the control-command and signalling track-side subsystems.

This document can also be used for axle counter systems installed on lines which are not declared as interoperable (including metro and tram lines).

For wheel sensors and wheel detectors in other applications than axle counters but using 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.

Under interoperability, the frequency bands and rolling stock emission limits are currently defined in the axle counter FrM as specified in the ERA/ERTMS/033281 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 16432-1:2017, *Railway applications - Ballastless track systems - Part 1: General requirements*

EN 50121-4:2016, *Railway applications - Electromagnetic compatibility - Part 4: Emission and immunity of the signalling and telecommunications apparatus*

EN 50124-2:2017, *Railway applications - Insulation coordination - Part 2: Overvoltages and related protection*

EN 50125-3:2003, *Railway applications - Environmental conditions for equipment - Part 3: Equipment for signalling and telecommunications*

EN 50126-1:2017, *Railway Applications - The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 1: Generic RAMS Process*

EN 50126-2:2017, *Railway Applications - The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 2: Systems Approach to Safety*

EN 50128:2011, *Railway applications - Communication, signalling and processing systems - Software for railway control and protection systems*

EN 50129:2018, *Railway applications - Communication, signalling and processing systems - Safety related electronic systems for signalling*

EN 50592:2016, *Railway applications - Testing of rolling stock for electromagnetic compatibility with axle counters*

EN 60068-2-1:2007, *Environmental testing - Part 2-1: Tests - Test A: Cold (IEC 60068-2-1:2007)*

EN 60068-2-2:2007, *Environmental testing - Part 2-2: Tests - Test B: Dry heat (IEC 60068-2-2:2007)*

EN 60068-2-30:2005, *Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle) (IEC 60068-2-30:2005)*

EN 60529:1991,[1] *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61000-4-6:2014, *Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields (IEC 61000-4-6:2013)*

ERA/ERTMS/033281, *Interfaces between control-command and signalling trackside and other subsystems*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

[1] As impacted by EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/AC:2016-12 and EN 60529:1991/A2:2013/AC:2019-02,