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STN	**Železnice Kabína vodiča Časť 7: Dizajn displejov pre električkové vozidlá**	**STN EN 16186-7 28 7223**

Railway applications - Drivers cab - Part 7: Design of displays for tram vehicles

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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EUROPEAN STANDARD
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English Version

Railway applications - Driver's cab - Part 7: Design of displays for tram vehicles

Applications ferroviaires - Cabine de conduite - Partie 7 : Conception des affichages pour tramways

Bahnanwendungen - Führerraum - Teil 7: Displaygestaltung für Straßenbahnfahrzeuge

This European Standard was approved by CEN on 22 September 2025.

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European foreword

This document (EN 16186-7:2025) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2026, and conflicting national standards shall be withdrawn at the latest by May 2026.

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

EN 16186 *Railway applications — Driver’s cab* consists of the following parts:

— *Part 1: Anthropometric data and visibility*;

— *Part 2: Integration of displays, controls and indicators*;

— *Part 3: Design of displays*;

— *Part 4: Layout and access*;

— *Part 5: External visibility for tram vehicles*;

— *Part 6: Integration of displays, controls and indicators for tram vehicles*;

— *Part 7: Design of displays for tram vehicles*;

— *Part 8: Tram vehicle layout and access*.

NOTE Part 1 to 4 above-mentioned standards are only applicable for heavy rail vehicles.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

The requirements of this document have been developed taking into account the relevant regulations and the state of the art of tram vehicles.

The reasons for specifying the requirements are as follows:

— achieving harmonized and coherent presentation of information;

— defining Driver-Machine Interface ergonomics that is compatible with agreed interoperable specifications;

— to reduce the risk of incorrect operation by a driver working with different tram vehicles fitted with displays;

— facilitating tram vehicle operation with unified ergonomics, hence reducing the cost of driver training.

Information designed according to this standard is deemed to fulfil the following basic principles:

— be clear, correct and necessary;

— indicate its priority, whether by positioning, size, colour, sounds, sound levels, etc.;

— minimize confusion of the driver;

— prevent unnecessary distraction of the drivers' attention while performing their normal duties.

If a requirement contains an option, the choice of this option is purely up to the applicant.

NOTE 1 The term “option” is to be understood as a possibility that is usually expressed by the word “can”.

NOTE 2 In the context of this document, “tram vehicles” also means “tram-trains”.

1 Scope

This document is applicable to vehicles operating on tram networks.

This document specifies all necessary design rules and associated assessment criteria as well as guidance concerning the design of information and the corresponding user interfaces of driver's cabs of tram vehicles.

It considers the tasks the driver has to carry out and human factors. This document specifies how information is arranged and displayed.

All assessments based on the normative requirements of this document are applicable mainly to:

— symbols provided by Annex A;

— arrangement of screen areas conforming with Figure 1 (generic organization of information);

— colours, fonts;

— audible information.

This document is applicable to the following aspects:

— legibility and intelligibility of displayed information: general rules concerning the layout of information on the displays, including character size and spacing;

— definition of harmonized colours, symbols, etc.;

— definition of harmonized principles for the command interface (by physical or touchscreen buttons): size, symbols, reaction time, way to give feedback to the driver, etc.;

— general arrangements (dialogue structures, sequences, layout philosophy, colour philosophy), symbols, audible information, data entry arrangements.

NOTE If this document deals with how information can be given for operation and in degraded situations, it does not define operating rules and degraded situations.

This document does not request any safety requirement related with displayed information.

This document specifies minimum requirements and does not prevent innovative solutions.

Requirements describing the functions using the display are out of scope of 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 16186-5:2021+A1:2023, *Railway applications — Driver's cabs — Part 5: External visibility for tram vehicles*

EN 16186-6:2024, *Railway applications - Driver's cab - Part 6: Integration of displays, controls and indicators for tram vehicles*

EN 17343, *Railway applications - General terms and definitions*

EN 894-2:1997+A1:2008, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 2: Displays*

EN ISO 9241-307:2008, *Ergonomics of human-system interaction — Part 307: Analysis and compliance test methods for electronic visual displays (ISO 9241-307:2008)*

ISO 2575:2021, *Road vehicles — Symbols for controls, indicators and tell-tales*