

STN	Železnice Kabína vodiča Časť 6: Integrácia displejov, ovládačov a indikátorov pre električkové vozidlá	STN EN 16186-6 28 7223
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Railway applications - Driver`s cab - Part 6: Integration of displays, controls and indicators for tram vehicles

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

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English Version

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

Applications ferroviaires - Cabine de conduite - Partie
6 : Intégration des afficheurs, commandes et
indicateurs pour tramways

Bahnanwendungen - Führerraum - Teil 6: Integration
von Displays, Bedien- und Anzeigeelementen bei
Straßenbahnfahrzeugen

This European Standard was approved by CEN on 12 August 2024.

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EN 16186-6:2024 (E)**European foreword**

This document (EN 16186-6:2024) 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of an identical text or by endorsement, at the latest by April 2025, and conflicting national standards shall be withdrawn at the latest by April 2025.

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 is written as an EN series on all the aspects to be considered when designing a driver's cab, from anthropometric data and visibility, over the integration of displays, controls and indicators as well as the design of displays to cab layout and access facilities. The background information on the anthropometric data used is provided in CEN/TR 16823 [1].

EN 16186, *Railway applications — Driver's cab* currently consists of the following parts:

- *Part 1: Anthropometric data and visibility;*
- *Part 2: Integration of displays, controls and indicators;*
- *Part 3: Design of displays for heavy rail vehicles;*
- *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 ¹⁾;*
- *Part 8: Layout and access for tram vehicles.*

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

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.

¹⁾ Under preparation. Stage at the time of publication: prEN 16186-7.

Introduction

This document addresses the operating and perception requirements of controls and displays elements in tram vehicles driver cabs. It provides current cab design principles.

EN 16186-6:2024 (E)**1 Scope**

This document is applicable to vehicles operating on tram networks.

This document gives design requirements and guidance in order to ensure visibility and operability of displays, controls and indicators in the cab in all operating conditions (day, night, natural or artificial lighting).

It covers four aspects:

- the characteristics of the displays, controls and indicators in order to ensure proper visibility: i.e. range of luminance and contrast as well as the possibility of adjustment of perceived brightness;
- the requirements for the location of the displays, keyboards, controls and indicators in the cab and on the driver's desk: i.e. position, angle of visibility, etc. with consideration of the normal driving position and the working environment (windscreen, natural or artificial lighting in the cab, unwanted glare and reflections, etc.);
- the characteristics and requirements for the location of microphones and loudspeakers;
- design of symbols.

NOTE All element numbers within the text refer to Table B.1.

This document does not apply to refurbishment of existing vehicles. This document is not intended to be applicable to driver's auxiliary desk, except for 5.3.13, Clause 6, 7.1.2, Clause 9 and Table B.1.

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

EN 13272-2, *Railway applications — Electrical lighting for rolling stock in public transport systems — Part 2: Urban rail*

EN 14752, *Railway applications — Bodyside entrance systems for rolling stock*

EN 15227, *Railway applications — Crashworthiness requirements for rail vehicles*

EN 16186-5, *Railway applications — Driver's cab — Part 5: External visibility for tram vehicles*

EN 16186-8, *Railway applications — Driver's cab — Part 8: Tram vehicle layout and access*

EN 17355, *Railway applications — Communication device for urban rail — System requirements*

EN ISO 15008:2017, *Road vehicles — Ergonomic aspects of transport information and control systems — Specifications and test procedures for in-vehicle visual presentation (ISO 15008:2017)*

ISO 3381, *Railway applications — Acoustics — Noise measurement inside railbound vehicles*

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