

# **Railway applications Fixed installations D.C. switchgear Part 1: General**

Railway applications Fixed installations D.C.  
switchgear Part 1: General

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50123-1:2003 sisaldab Euroopa standardi EN 50123-1:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 05.06.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50123-1:2003 consists of the English text of the European standard EN 50123-1:2003.</p> <p>This document is endorsed on 05.06.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> The EN 50123 series specifies requirements for d.c. switchgear and controlgear and is intended to be used in fixed electrical installations with nominal voltage not exceeding 3 000 V d.c., which supply electrical power to vehicles for public guided transport, i.e. railway vehicles, tramway vehicles, underground vehicles and trolley-buses</p>	<p><b>Scope:</b> The EN 50123 series specifies requirements for d.c. switchgear and controlgear and is intended to be used in fixed electrical installations with nominal voltage not exceeding 3 000 V d.c., which supply electrical power to vehicles for public guided transport, i.e. railway vehicles, tramway vehicles, underground vehicles and trolley-buses</p>
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English version

**Railway applications –  
Fixed installations – D.C. switchgear  
Part 1: General**

Applications ferroviaires –  
Installations fixes –  
Appareillage à courant continu  
Partie 1: Généralités

Bahnanwendungen –  
Ortsfeste Anlagen –  
Gleichstrom-Schaltanlagen  
Teil 1: Allgemeines

This European Standard was approved by CENELEC on 2002-09-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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## CENELEC

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

This European Standard was prepared by SC 9XC, Electric supply and earthing systems for public transport equipment and ancillary apparatus (fixed installations), of the Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50123-1 on 2002-09-01.

This European Standard supersedes EN 50123-1:1995. It has been prepared taking into account IEC document 9/578/FDIS (61992-1) in order to align technically as much as possible this EN 50123-1 and IEC 61992-1. These documents are to be considered as technically equivalent except for those references and peculiarities which are due to the European standardisation in the railway application field.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2003-09-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2005-09-01

Annexes designated “normative” are part of the body of the standard.

Annexes designated “informative” are given for information only.

In this standard, Annexes A, B and C are normative and Annexes D and E are informative.

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## 1 Scope

The EN 50123 series specifies requirements for d.c. switchgear and controlgear and is intended to be used in fixed electrical installations with nominal voltage not exceeding 3 000 V d.c., which supply electrical power to vehicles for public guided transport, i.e. railway vehicles, tramway vehicles, underground vehicles and trolley-buses.

Part 1 specifies general requirements.

The other parts are covering

- Part 2 D.C. circuit breakers,
- Part 3 Indoor d.c. disconnectors, switch-disconnectors and earthing switches,
- Part 4 Outdoor d.c. disconnectors, switch-disconnectors and earthing switches,
- Part 5 Surge arresters and low voltage limiters for specific use in d.c. systems,
- Part 6 D.C. switchgear assemblies,
- Part 7-1 Measurement, control and protection devices for specific use in d.c. traction systems – Application guide,
- Part 7-2 Measurement, control and protection devices for specific use in d.c. traction systems – Isolating current transducers and other current measuring devices,
- Part 7-3 Measurement, control and protection devices for specific use in d.c. traction systems – Isolating voltage transducers and other voltage measuring devices

## 2 Normative references

This European Standard series incorporates by dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard series only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 50119	2001	<i>Railway applications – Fixed installations – Electric traction overhead contact lines</i>
EN 50121	Series	<i>Railway applications – Electromagnetic compatibility</i>
EN 50122-1	1997	<i>Railway applications – Fixed installations – Part 1: Protective provisions relating to electrical safety and earthing</i>
EN 50124-1	2001	<i>Railway applications – Insulation coordination – Part 1: Basic requirements – Clearances and creepage distances for electrical and electronic equipment</i>
EN 50125-2	2002	<i>Railway applications – Environmental conditions for equipment – Part 2: Fixed electrical installations</i>
EN 50126	1999	<i>Railway applications – The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS)</i>
EN 50163	1995	<i>Railway applications – Supply voltage of traction systems (IEC 60850:2000)</i>
EN 60099-1	1994	<i>Surge arresters – Part 1: Non-linear resistor type gapped surge arresters for a.c. systems (IEC 60099-1:1991)</i>

EN 60099-4	1993	<i>Surge arresters – Part 4: Metal-oxide surge arresters without gaps for a.c. systems (IEC 60099-4:1991)</i>
EN 60129 + A1 + A2	1994 1994 1996	<i>Alternating current disconnectors and earthing switches (IEC 60129:1984 + A1:1992 + A2:1996)</i>
EN 60243-1	1998	<i>Electrical strength of insulating materials – Test methods – Part 1: Tests at power frequencies (IEC 60243-1:1998)</i>
EN 60269	series	<i>Low-voltage fuses (IEC 60269 series)</i>
EN 60298	1996	<i>AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV (IEC 60298:1990 + corr. April 1995 + A1:1994)</i>
EN 60507	1993	<i>Artificial pollution tests on high-voltage insulators to be used on a.c. systems (IEC 60507:1991)</i>
EN 60529	1991	<i>Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)</i>
EN 60694	1996	<i>Common specifications for high-voltage switchgear and controlgear standards (IEC 60694:1996)</i>
EN 60721	series	<i>Classification of environmental conditions (IEC 60721 series)</i>
EN 60947-1	1999	<i>Low-voltage switchgear and controlgear – Part 1: General rules (IEC 60947-1:1999, mod.)</i>
EN 60947-2 + A1	1996 1997	<i>Low-voltage switchgear and controlgear – Part 2: Circuit breakers (IEC 60947-2:1995 + A1:1997)</i>
HD 214 S2	1980	<i>Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions (IEC 60112:1979)</i>
HD 380 S2	1987	<i>Test methods for evaluating resistance to tracking and erosion of electrical insulating materials used under severe ambient conditions (IEC 60587:1984)</i>
HD 588.1 S1	1991	<i>High-voltage test techniques – Part 1: General definitions and test requirements (IEC 60060-1:1989 + corr. March 1990)</i>
IEC 60050-441	1984	<i>International Electrotechnical Vocabulary (IEV) – Chapter 441: Switchgear, controlgear and fuses</i>
IEC 60050-446	1983	<i>International Electrotechnical Vocabulary (IEV) – Chapter 446: Electrical relays</i>
IEC 60050-605	1983	<i>International Electrotechnical Vocabulary (IEV) – Chapter 605: Generation, transmission and distribution of electricity – Substations</i>
IEC 60050-811	1991	<i>International Electrotechnical Vocabulary (IEV) – Chapter 811: Electric traction</i>
IEC 60466	1987	<i>A.C. insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 38 kV</i>
IEC 61245	1993	<i>Artificial pollution tests on high voltage insulators to be used in d.c. systems</i>