

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

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 50123-1:2002 sisaldab Euroopa standardi EN 50123-1:1995 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 18.12.2002 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti standardiorganisatsioonist.

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This standard is ratified with the order of Estonian Centre for Standardisation dated 18.12.2002 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

ICS 29.130.99, 45.020

d.c., definition, dielectric strength test, electric endurance test, electric switchgear, electric traction, generalities, heat limit, heating test, operating requirements, railway fixed equipment

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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

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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.

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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 Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50123-1 on 1994-12-06.

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) 1995-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1995-12-01

Annexes designated "normative" are part of the body of the standard. Annexes designated "informative" are given for information only. In this standard, annexes A and B are normative and annexes C and D are informative.

INTRODUCTION

This European Standard consists of seven Parts. Part 1 gives general information related to d.c switchgear and controlgear in fixed installations of railway applications.

The other parts address the following specific equipment:

- Part 2 d.c. circuit breakers;
- Part 3 indoor d.c. switch-disconnectors and d.c. disconnectors;
- Part 4 outdoor d.c. in-line switch-disconnectors and d.c. 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 measurement, control and protection of d.c. traction systems.

NOTE: Cables and busbars external to switchgear assemblies or apparatus, contact lines, feeding lines, line supports and insulators are subject to other standards.

1 SCOPE

This European Standard, consisting of seven Parts, 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 trolleybuses.

NOTE: In 5.1.1.1 a restriction is shown in respect to the ripple factor of the supply.

2 NORMATIVE REFERENCES

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

EN 50119	199x°	Railway applications - Fixed installations - Electric traction overhead contact lines systems - General requirements
EN 50121	series°	Railway applications - Electromagnetic compatibility (EMC)
EN 50122-1	199x°	Railway applications - Fixed installations - Part 1: Protective provisions relating to electrical safety and earthing
EN 50124-1	199x°	Railway applications - Insulation co-ordination - Part 1: Basic requirements - Clearances and creepage distances
EN 50126	series°	Railway applications - Specification and demonstration of reliability, availability, maintainability and safety (RAMS)

° Document in preparation in February 1995.

EN 50163	1995	Railway applications - Supply voltages of traction systems
EN 60099-1	1993	Surge arresters - Part 1: Non-linear resistor type gapped surge arresters for a.c. systems (IEC 99-1:1991)
EN 60507	1993	Artificial pollution tests on high voltage insulators to be used in a.c. systems (IEC 507:1991)
EN 60947-1 + A11	1991 1992	Low-voltage switchgear and controlgear - Part 1: General rules (IEC 947-1:1988, modified)
EN 60947-2 + A1	1991 1993	Part 2: Circuit breakers (IEC 947-2:1991) (IEC 947-2:1991/A1:1992)
HD 448 S3	1995	Common clauses for high-voltage switchgear and controlgear standards (IEC 694:1980 + A1:1985 + A2:1993)
HD 478	series	Classification of environmental conditions
HD 588.1 S1	1991	High-voltage test techniques - Part 1: General definitions and test requirements (IEC 60-1:1989)
IEC 50(441)	1984	International Electrical Vocabulary (IEV) Chapter 441: Switchgear, controlgear and fuses
IEC 50(446)	1983	Chapter 446: Electrical relays
IEC 50(605)	1983	Chapter 605: Generation, transmission and distribution of electricity - Substations
IEC 50(811)	1991	Chapter 811: Electric traction

NOTE: A list of publications which may be of use is given in the informative annex D: Bibliography.

3 DEFINITIONS

For the purposes of this standard, the definitions given in EN 60947, IEC 50(811), 50(441), 50(446) and 50(605) apply together with the following:

3.1 General terms

3.1.1 switching device

A device designed to make or break the current in one or more electric circuits. (IEC 50(441):1984, 14.01)

3.1.2 d.c. circuit breaker

A switching device capable of making, carrying and breaking direct currents under normal circuit conditions and also making, carrying (up to a specified limit and for a specified time) and breaking currents under specified abnormal conditions, such as those of short-circuit.