

Railway applications - Fixed installations - Particular requirements for alternating current switchgear - Part 2: Disconnectors, earthing switches and switches with nominal voltage above 1 kV

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EESTI STANDARDI EESSÕNA

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English version

**Railway applications -
Fixed installations -
Particular requirements for alternating current switchgear -
Part 2: Disconnectors, earthing switches and switches with nominal
voltage above 1 kV**

Applications ferroviaires -
Installations fixes -
Spécifications particulières pour
appareillage à courant alternatif -
Partie 2: Sectionneurs, sectionneurs de
terre et interrupteurs de tension nominale
supérieure à 1 kV

Bahnanwendungen – Ortsfeste Anlagen -
Besondere Anforderungen an
Wechselstrom-Schaltanlagen –
Teil 2: Trennschalter, Erdungsschalter
und Lastschalter mit einer Nennspannung
größer als 1 kV

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CENELEC

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

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Foreword

This document (EN 50152-2:2012) has been prepared by CLC/SC 9XC "Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)".

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) 2013-10-15
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2015-10-15

This document supersedes EN 50152-2:2007.

EN 50152-2:2012 includes the following significant technical changes with respect to EN 50152-2:2007:

This standard was revised to reflect the latest versions of standards referenced and to remove text already included in the EN 62271 series. The scope was extended to include single-phase and two-phase devices. Definitions were added to provide the necessary precision and to meet the needs of railway applications. Table 1 was reworked according to the changes of EN 50124-1:2001, Table A.2 and Table B.1. Table 2 'Coordination table of rated values for devices' of the previous version was removed. Ratings previously given under the clause 'type tests' were moved to the new Table 2 'Mechanical endurance classes and recommended use'.

EN 50152 series under the generic title *Railway applications — Fixed installations — Particular requirements for alternating current switchgear* is divided as follows:

- *Part 1: Circuit-breakers with nominal voltage above 1 kV;*
- *Part 2: Disconnectors, earthing switches and switches with nominal voltage above 1 kV;*
- *Part 3-1: Measurement, control and protection devices for specific use in a.c. traction systems — Application guide;*
- *Part 3-2: Measurement, control and protection devices for specific use in a.c. traction systems — Single-phase current transformers;*
- *Part 3-3: Measurement, control and protection devices for specific use in a.c. traction systems — Single-phase inductive voltage transformers.*

Introduction

This standard needs to be read in conjunction with EN 62271-1:2008, EN 62271-102:2002 and/or EN 62271-103:2011, depending on the equipment involved.

References in subclauses in EN 62271-102 need to be to EN 62271-1 instead of EN 60694.

Where a particular clause of EN 62271-1, EN 62271-102 or EN 62271-103 is not mentioned in this standard, that clause applies as far as reasonable. Where requirements relate exclusively to three-phase systems or to voltages outside those in use in traction systems, they are not applicable. Where this standard states "addition" or "replacement", the relevant text of EN 62271-1, EN 62271-102 and EN 62271-103 needs to be adapted accordingly. When a clause is named applicable to both EN 62271-102 or EN 62271-103, then reference needs to be made only to the standard appropriate for the respective switching device.

The numbering of clauses in EN 62271 series is not used in this European Standard. The numbering in square brackets refers to the numbering of clauses in EN 62271 series. References specific to numbering of clauses in EN 62271-102 have the prefix '102.' and specific to EN 62271-103 have the prefix '103.'

Where terms defined in EN 62271 series conflict with definitions of same terms as given in IEC 60050-811:1991, or the other railway applications documents listed in the normative references, the definitions in EN 62271-1, EN 62271-102 and EN 62271-103 need to be used.

NOTE 1 The clause numbering in EN 62271-102 and EN 62271-103 is the same as in EN 62271-1. Additional requirements specific to the type of switching device start with subclause numbers from 100.

NOTE 2 The suffix N which appears in this standard for rated values is not used in EN 62271 series.

1 Scope

This European Standard is applicable to single-pole and two-pole alternating current (a.c.) disconnectors, earthing switches and switches which are:

- designed for indoor or outdoor fixed installations in traction systems, and
- operated with an a.c. line voltage and frequency as specified in EN 50163.

NOTE 1 EN 50163 specifies the a.c. traction systems 15 kV 16,7 Hz and 25 kV 50 Hz.

NOTE 2 As rails of a.c. traction systems are connected to earth and included in the return current path all phase to earth voltages will be within the tolerances as specified in EN 50163. Nevertheless phase to phase voltages are sometimes higher, e.g. in autotransformer systems.

NOTE 3 The two poles of a switch can be connected in series to provide secure isolation (i.e. two breaks in series).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50121-5, *Railway applications — Electromagnetic compatibility — Part 5: Emission and immunity of fixed power supply installations and apparatus*

EN 50124-1:2001, *Railway applications — Insulation coordination — Part 1: Basic requirements — Clearances and creepage distances for all electrical and electronic equipment*

EN 50152-1:2012, *Railway applications — Fixed installations — Particular requirements for alternating current switchgear — Part 1: Circuit breakers with nominal voltage above 1 kV*

EN 50163:2004, *Railway applications — Supply voltages of traction systems*

EN 62271-1:2008, *High-voltage switchgear and controlgear — Part 1: Common specifications (IEC 62271-1:2007)*

EN 62271-102:2002, *High-voltage switchgear and controlgear — Part 102: Alternating current disconnectors and earthing switches (IEC 62271-102:2001 + corrigendum Apr. 2002 + corrigendum May 2003)*

EN 62271-103:2011, *High voltage switchgear and controlgear — Part 103: Switches for rated voltages above 1 kV up to and including 52 kV (IEC 62271-103:2011)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 62271-1:2008, EN 62271-102:2002, EN 62271-103:2011 and the following apply.

3.1

switching device

general term covering disconnectors, earthing switches and switches

Note 1 to entry: This definition of 'switching device' is limited to this standard. There may be different or more comprising use in other parts of the EN 50152 and EN 62271 series (e.g. in EN 62271-1:2008, 3.1.1).