Irish Standard
I.S. EN 50163:2004&A1:2007&AC:2010&AC:2013

Railway applications - Supply voltages of traction systems

I.S. EN 50163:2004&A1:2007&AC:2010&AC:2013

Incorporating amendments/corrigenda/National Annexes issued since publication:

EN 50163:2004/A1:2007

EN 50163:2004/AC:2010
EN 50163:2004/AC:2013

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:	*Published:*
EN 50163:2004	2004-11-29

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Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 50163:2004&A1:2007&AC:2010&AC:2013 is the adopted Irish version of the European Document EN 50163:2004, Railway applications - Supply voltages of traction systems

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EN 50163:2004/AC:2013

CENELEC

Corrigendum to EN 50163:2004

English version

Following Decision 47/17 of CLC/TC 9X, replace in Annex B the Belgium Special National Condition for sub-clause 4.1 by:

4.1 Belgium

The highest non-permanent voltage (U_{max2}) is 3 900 V. During regenerative breaking, the highest non-permanent voltage (U_{max2}) shall be limited to 3 800 V. It is recommended to make the maximum voltage for regenerative breaking adaptable. This will permit the increase of the effect of regenerative breaking when this national condition is removed in the future.

January 2013

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Corrigendum to EN 50163:2004

English version

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Annex ZZ
(informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex III of the EC Directive 2008/57/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive(s) concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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May 2010

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50163/A1

July 2007

ICS 29.280

English version

Railway applications - Supply voltages of traction systems

Applications ferroviaires - Tensions d'alimentation des réseaux de traction

Bahnanwendungen - Speisespannungen von Bahnnetzen

This amendment A1 modifies the European Standard EN 50163:2004; it was approved by CENELEC on 2007-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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

Ref. No. EN 50163:2004/A1:2007 E

Foreword

This amendment to the European Standard EN 50163:2004 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 amendment A1 to EN 50163:2004 on 2007-03-01.

The following dates were fixed:

– latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2008-03-01
– latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2010-03-01

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4 Voltages and frequencies of traction systems

4.2 Frequency

Replace

For 16,7 Hz electric traction systems, the value are:

- For systems with synchronous connection to an interconnected system:

  16,7 Hz ± 1 % (i.e. 16,5 Hz … 16,83 Hz) for 99,5 % of a year

  16,7 Hz ± 6 % (i.e. 15,69 Hz … 17,36 Hz) for 100 % of the time

by

For 16,7 Hz electric traction systems, the values are:

- For systems with synchronous connection to an interconnected system:

  16,7 Hz ± 1 % (i.e. 16,50 Hz ... 16,83 Hz) for 99,5 % of a year

  16,7 Hz + 4 % / - 6 % (i.e. 15,67 Hz ... 17,33 Hz) for 100 % of the time

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EUROPEAN STANDARD **EN 50163**

NORME EUROPÉENNE

EUROPÄISCHE NORM November 2004

ICS 29.280 Supersedes EN 50163:1995

English version

Railway applications – Supply voltages of traction systems

Applications ferroviaires – Tensions d'alimentation des réseaux de traction

Bahnanwendungen – Speisespannungen von Bahnnetzen

This European Standard was approved by CENELEC on 2004-07-06. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Ref. No. EN 50163:2004 E

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. It also concerns the expertise of SC 9XB, Electromechanical material on board of rolling stock.

For TSI lines, modifications and amendments should be made within a process frame which is related to the legal status of the TSI.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50163 on 2004-07-06.

This European Standard supersedes EN 50163:1995.

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)	2005-07-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2007-07-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directives. See Annex ZZ.

Contents

Figures

Tables

1 Scope

This European Standard specifies the main characteristics of the supply voltages of traction systems, such as traction fixed installations, including auxiliary devices fed by the contact line, and rolling stock, for use in the following applications :

- railways;
- guided mass transport systems such as tramways, elevated and underground railways mountain railways, and trolleybus systems;
- material transportation systems.

This European Standard does not apply to

- mine traction systems in underground mines,
- cranes, transportable platforms and similar transportation equipment on rails, temporary structures (e.g. exhibition structures) in so far as these are not supplied directly or via transformers from the contact line system and are not endangered by the traction power supply system,
- suspended cable cars,
- funicular railways.

This European Standard deals with long term overvoltages as shown in the Annex A.

2 Normative references

The following referenced documents are indispensable for the application 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 50119	Railway applications – Fixed installations - Electric traction overhead contact lines
EN 50122-1:1997	Railway applications – Fixed installations – Part 1: Protective provisions relating to electrical safety and earthing
EN 50160:1999	Voltage characteristics of electricity supplied by public distribution systems
EN 50215:1999	Railway applications – Testing of rolling stock after completion of construction and before entry into service
EN 50388 [1)]	Railway applications – Power supply and rolling stock – Technical criteria for the coordination between power supply (substation) and rolling stock to achieve interoperability
IEC 60050-811	International Electrotechnical vocabulary - Chapter 811: Electric traction

1) At draft stage.