BS EN 50163:2004+A2:2020
Incorporating corrigenda May 2010, January 2013 and January 2020

BSI Standards Publication

Railway applications — Supply voltages of traction systems

bsi.

National foreword

This British Standard is the UK implementation of EN 50163:2004+A2:2020, incorporating corrigenda May 2010 and January 2013. It supersedes BS EN 50163:2004+A1:2007, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CENELEC text carry the number of the CENELEC amendment. For example, text altered by CENELEC amendment A1 is indicated by ▌A1〉 〈A1▐.

The UK participation in its preparation was entrusted to Technical Committee GEL/9/3, Railway Electrotechnical Applications - Fixed Equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

The UK committee draws attention to the fact that Subclause 4.2 of this standard includes informative text within NOTE 2 that is poorly worded and might therefore be misinterpreted. Consequently, BSI intends to submit a proposal to CENELEC requesting that NOTE 2 be amended or deleted. Until such time as this change is made within the standard, users are advised to disregard the current published text in NOTE 2.

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

Published by BSI Standards Limited 2020

ISBN 978 0 539 13037 9

ICS 29.280

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 6 January 2005.

Amendments/corrigenda issued since publication

Date	Text affected
28 September 2007	Implementation of CENELEC amendment A1:2007
31 August 2010	Implementation of CENELEC corrigendum May 2010: Annex ZZ replaced
30 June 2013	Implementation of CENELEC corrigendum January 2013: Annex B, Belgium Special National Condition for Subclause 4.1 replaced
31 January 2020	Additional national foreword text added
29 February 2020	Implementation of CENELEC amendment A2:2020: Annex ZZ replaced

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50163:2004+A2

February 2020

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 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.

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

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Ref. No. EN 50163:2004/A2:2020 E

European 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.

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Foreword to amendment A1

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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Foreword to amendment A2

This document (EN 50163:2004/A2:2020) has been prepared by CLC/SC 9XA "Communication, signalling and processing systems".

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)	2020-08-07
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2020-08-07

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

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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.