Railway applications - Rolling stock - Combined test method for traction Systems

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NATIONAL FOREWORD

See Eesti standard EVS-EN 61377:2016 sisaldab Euroopa standardi EN 61377:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 61377:2016 consists of the English text of the European standard EN 61377:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.04.2016.	Date of Availability of the European standard is 22.04.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 61377

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English Version

Railway applications - Rolling stock - Combined test method for traction Systems (IEC 61377:2016)

Applications ferroviaires - Matériel roulant - Méthode d'essais combinés pour systèmes de traction (IEC 61377:2016)

Bahnanwendungen - Bahnfahrzeuge - Kombiniertes Prüfverfahren für Traktionssysteme (IEC 61377:2016)

This European Standard was approved by CENELEC on 2016-02-23. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

The text of document 9/2078/FDIS, future edition 2 of IEC 61377, prepared by IEC/TC 9 "Electrical equipment and systems for railways" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61377:2016.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-11-23
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2019-02-23

This document supersedes EN 61377-1:2006, EN 61377-2:2002 and EN 61377-3:2002.

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

Endorsement notice

The text of the International Standard IEC 61377:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60077-3	NOTE	Harmonized as EN 60077-3.
IEC 60077-4	NOTE	Harmonized as EN 60077-4.
IEC 60310	NOTE	Harmonized as EN 60310.
IEC 60322	NOTE	Harmonized as EN 60322.
ISO 14253-2	NOTE	Harmonized as EN ISO 14253-2.
ISO/IEC 17025	NOTE	Harmonized as EN ISO/IEC 17025.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

Publication	Year	Title	EN/HD	Year
IEC 60050	Series	International Electrotechnical Vocabulary	-	-
IEC 60349-1	-	Electric traction - Rotating electrical machines for rail and road vehicles - Part 1: Machines other than electronic converter-fed alternating current motors	EN 60349-1	-
IEC 60349-2	-	Electric traction - Rotating electrical machines for rail and road vehicles - Part 2: Electronic converter-fed alternating current motors	EN 60349-2	-
IEC/TS 60349-3	-	Electric traction - Rotating electrical machines for rail and road vehicles - Part 3: Determination of the total losses of converter-fed alternating current motors by summation of the component losses	-	-
IEC 60349-4	-	Electric traction - Rotating electrical machines for rail and road vehicles - Part 4: Permanent magnet synchronous electrical machines connected to an electronic converter	EN 60349-4	-
IEC 60850	-	Railway applications - Supply voltages of traction systems	-	-
IEC 61133	-	Railway applications - Rolling stock - Testing of rolling stock on completion of construction and before entry into service	-	-
IEC 61287-1	-	Railway applications - Power converters installed on board rolling stock - Part 1: Characteristics and test methods	EN 61287-1	-
IEC 62313	-	Railway applications - Power supply and rolling stock - Technical criteria for the coordination between power supply (substation) and rolling stock	-	-

CONTENTS

RAILWAY APPLICATIONS – ROLLING STOCK – COMBINED TEST METHOD FOR TRACTION SYSTEMS

1 Scope

This International Standard applies to the traction system consisting (when it applies) of traction motor(s), converter(s), traction control equipment including software, transformer, input filters, brake resistors, main circuit-breaker, cooling equipment, transducers, contactors, etc.

Figure 1 is just an overview and is not representative of all traction system architectures.

Current collector, mechanical braking systems and gearbox are not in the scope of this standard.

Types of motors applicable in this standard are asynchronous, or synchronous including permanent magnet (PMM), or direct current (DC).

The auxiliary converter(s) is (are) part of the scope when the auxiliary converter is enclosed within the traction converter. Otherwise, when the traction system feeds an auxiliary system outside the traction converter, the auxiliary system can be replaced by an equivalent load.

NOTE 1 Energy storage system is not considered in this standard since there is no specific type test standard for energy storage system.

NOTE 2 Auxiliary loads validation is not part of this standard.

NOTE 3 The gearbox can be part of test set-up, but it is not a part of traction system.

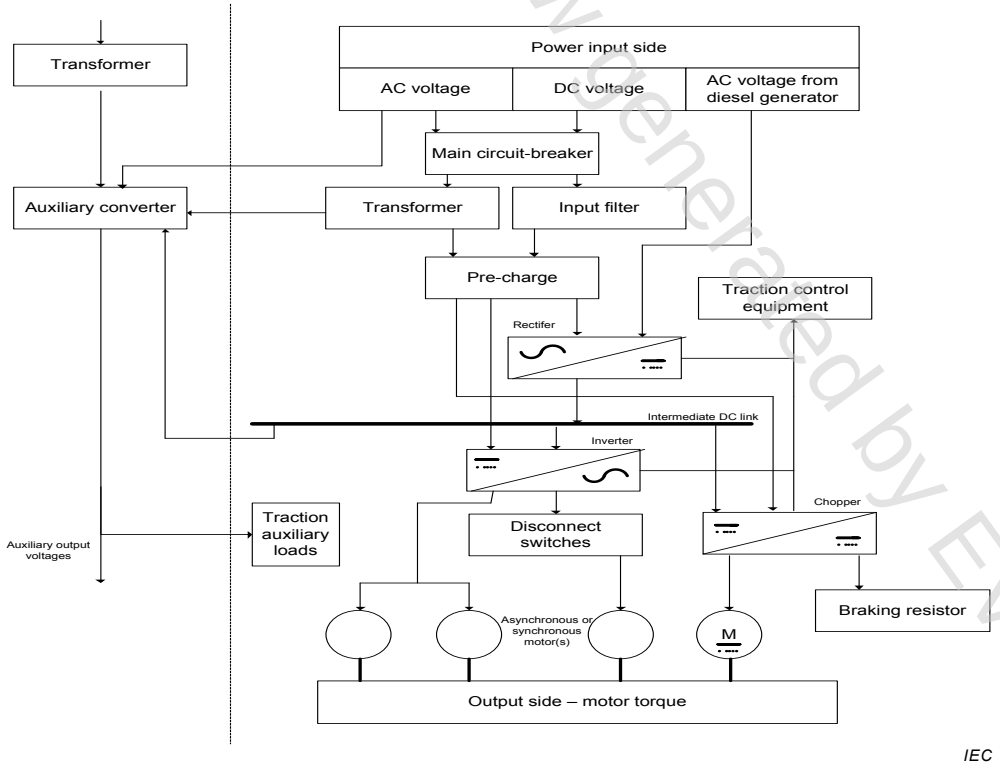

Figure 1 – Overview of traction system architecture

The objective of this standard is to specify the type test of a traction system, mainly comprising of:

– test of performance characteristics;
– test methods of verifying these performance characteristics.

This standard does not specify the type test of each individual component.

The traction system under test incorporates at least one complete traction conversion line (at least one traction converter and its related loads, one transformer in the case of AC supply or input filter in the case of DC supply). The representativeness of the traction system under test versus the actual traction system is agreed between the user and manufacturer.

Figure 2 gives one example of the relationship between the traction system under test and the whole traction system.

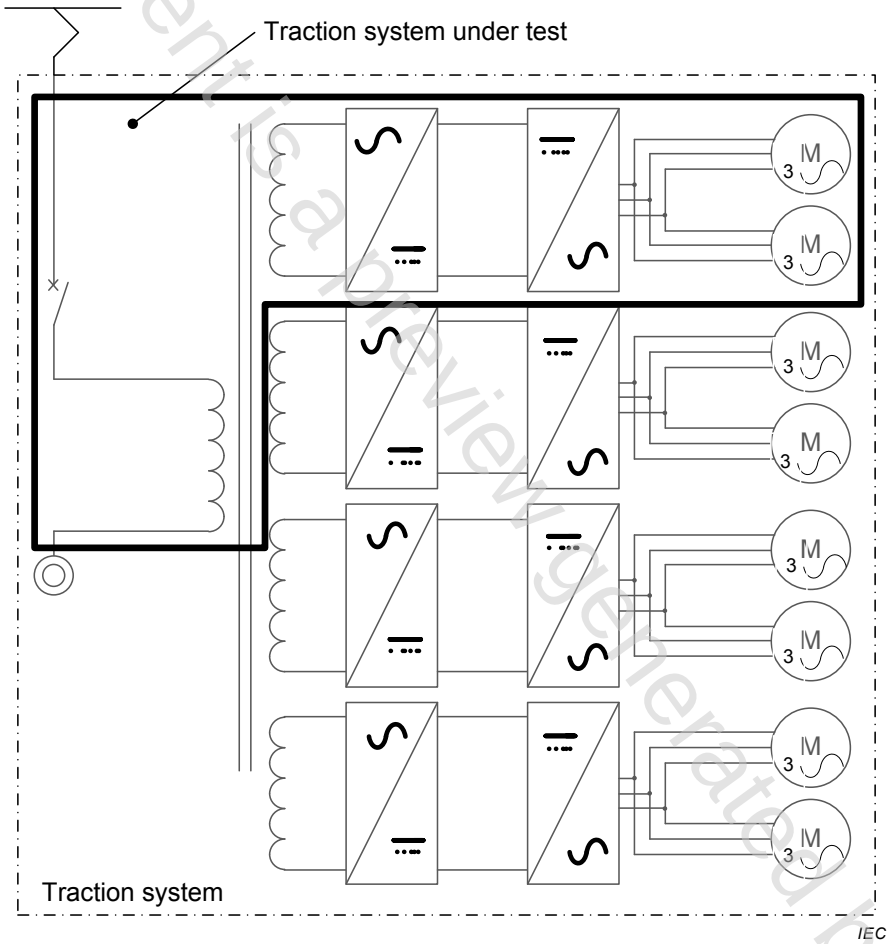

Figure 2 – Example of relationship between the “traction system under test” and the “traction system”

The traction system under test is equipped with components that are representative of the production series.

Deviations may be permitted by agreement between user and manufacturer, and are justified from an impact stand point in advance of the test. Using equivalent components or parts is permitted if no significant influence on the test result is expected.