



ENTWURF OVE EN IEC 62590-1

Ausgabe: 2024-03-15

Railway applications – Electronic power converters for fixed installations Part 1: General requirements (IEC 9/3043/CDV)

Hinweis:

Aufgrund von Stellungnahmen kann die endgültige Fassung dieser OVE-Norm vom vorliegenden Entwurf abweichen. Stellungnahmen (schriftlich) bis 2024-04-15 an den OVE.

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Erläuterungen zum Entwurf

Die von IEC TC 9 ausgearbeitete Internationale Norm wurde als Entwurf zu einer Europäischen Norm **EN IEC 62590-1** den CENELEC-Mitgliedern zur Abstimmung vorgelegt. Im Falle eines positiven Abstimmungsergebnisses im Sinne der CENELEC-Regeln wird dieser Entwurf zu einer EN führen.

Wie alle Mitgliedsorganisationen von CENELEC ist der OVE grundsätzlich verpflichtet, Europäische Normen in das nationale Normenwerk zu übernehmen und entgegenstehende Normen zurückzuziehen.

Der OVE legt hiermit diesen Entwurf eines europäischen Normungsdokumentes der Öffentlichkeit zur Information und Stellungnahme als OVE-Entwurf vor.

Da eine Übersetzung in die deutsche Sprache zu diesem Zeitpunkt noch nicht vorhanden ist, wird – um die von CENELEC vorgegebene Einspruchsfrist einzuhalten – die englischsprachige Fassung des IEC 9/3043/CDV zur Information und Stellungnahme vorgelegt.

Interessenten können das gegenständliche Dokument beim Österreichischen Verband für Elektrotechnik beziehen bzw. in den Text Einsicht nehmen.

COMMITTEE DRAFT FOR VOTE (CDV)

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IEC TC 9 : ELECTRICAL EQUIPMENT AND SYSTEMS FOR RAILWAYS

SECRETARIAT:

France

SECRETARY:

Mr Denis MIGLIANICO

OF INTEREST TO THE FOLLOWING COMMITTEES:

PROPOSED HORIZONTAL STANDARD:



Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC

☐ ENVIRONMENT

☐ QUALITY ASSURANCE

☐ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING

☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

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Recipients of this document are invited to submit, with their comments, notification of any relevant "In Some Countries" clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).

TITLE:

Railway applications - Electronic power converters for fixed installations - Part 1: General requirements

PROPOSED STABILITY DATE: 2027

NOTE FROM TC/SC OFFICERS:

CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms and definitionsFor the purposes of this document, the following terms and definitions apply.	9
3.1 Electrical Circuits.....	9
3.2 Semiconductor devices and combinations	11
3.3 Rated values.....	12
3.4 Cooling	13
3.5 Principal letter symbols	13
3.6 Abbreviated Terms.....	14
4 System Configurations.....	14
4.1 General Configurations	14
4.2 Components of an electronic power converter	14
4.3 Types of converters	15
4.3.1 General overview.....	15
4.3.2 AC/DC converter	16
4.3.3 DC converter	16
4.3.4 3AC to 1AC converters	16
4.3.5 1AC to 1AC converter.....	17
4.3.6 1AC converter	17
4.3.7 3AC converter	18
5 Performance requirements	18
5.1 Environmental conditions.....	18
5.1.1 General	18
5.1.2 Storage	18
5.1.3 Transportation and Handling.....	18
5.1.4 Normal conditions for operation including off-load periods	18
5.1.5 Vibrations	19
5.2 Insulation coordination.....	19
5.2.1 Electric traction power supply system	19
5.2.2 3AC power network	20
5.2.3 LV systems.....	20
5.3 Voltage conditions	20
5.4 Frequency conditions.....	20
5.5 Harmonics in connected systems	20
5.5.1 General	20
5.5.2 3AC power network side	20
5.5.3 Traction power supply side	21
5.6 Losses and efficiency.....	21
5.7 Load requirements, duty class and load cycles	21
5.7.1 General	21
5.7.2 Rated current and duty class	22
5.7.3 Load Cycle	22

5.8	Short time withstand current	22
5.9	Cooling Methods	22
5.9.1	General	22
5.9.2	Letters to be used	22
5.9.3	Arrangement of letters	23
5.10	Interlocking	24
5.11	Mechanical conditions	24
5.11.1	General	24
5.11.2	Earthing	24
5.11.3	Degree of protection	25
5.12	Failure modes	25
5.13	Audible Sound	26
5.14	Marking	26
5.14.1	Rating plate	26
5.14.2	Main circuit terminals	26
6	Tests	26
6.1	General requirements	26
6.1.1	General	26
6.1.2	Type test	26
6.1.3	Routine test	27
6.1.4	Overview of tests	27
6.2	Test items	27
6.2.1	Visual inspection	27
6.2.2	Test of accessory and auxiliary components	28
6.2.3	Insulation test	28
6.2.4	Operational Sequence test	29
6.2.5	Checking of protective functions	29
6.2.6	Control function test	29
6.2.7	Light Load functional test	30
6.2.8	Load test	30
6.2.9	Inherent voltage drop	30
6.2.10	Temperature rise test	30
6.2.11	Short time withstand current	34
6.2.12	Power loss determination	34
6.2.13	Audible Sound	34
6.2.14	EMC test	34
6.2.15	Harmonic test	34
6.2.16	Power factor measurement	34
6.2.17	Mechanical Test	34
Annex A	(normative) Standardized duty classes	35
Annex B	(informative) Duty cycle test with limited rate of rise	36
B.1	Comparison of duty cycle with the test cycle	36
Annex C	(informative) Traction load and duty cycle	38
C.1	Background	38
C.2	Evaluation of traction load	38
C.3	Transformation of time-weighted RMS into rated current and duty class	40
C.4	Examples	40
C.4.1	Evaluation of traction load	40

C.4.2	Benefit of using rated current I_N and duty class	41
C.5	Transformation of traction load into a rated current in conjunction with a duty class	43
Annex D (informative)	Typical load cycles	46
D.1	General	46
D.2	Cycle Examples	46
Annex E (informative)	Relationship between user and manufacturer	48
Bibliography		50
Figure 1	– General configuration	14
Figure 2	– General configuration of 3AC to DC converters	16
Figure 3	– General configurations of DC converters	16
Figure 4	– General configuration of 3AC to 1AC converters	17
Figure 5	– General configuration of 1AC to 1AC converters	17
Figure 6	– General configuration of 1AC converters	17
Figure 7	– General configuration of 3AC converters	18
Figure 8	- Test cycle for a duty class	32
Figure 9	– Determination of rise times	33
Figure B.1	- comparison of duty cycle and test cycle	36
Figure C.1	– Moving window in the time domain demonstrated on a theoretical traction load 1 with 60 min cycle time	40
Figure C.2	– Transfer of highest values from moving window calculation into the time-weighted RMS graph	41
Figure C.3	– Theoretical traction load 2, 10 min cycle time	42
Figure C.4	– Time-weighted RMS values of theoretical traction load 1 and 2	43
Figure C.5	– Typical load current of a mass transit traction load	44
Figure C.6	– Time-weighted RMS graph of the traction load in Figure C.5	45
Figure C.7	– Comparison of traction load with duty classes	45
Figure D.1	– Examples for load cycles	47
Figure E.1	– Relationship between user and manufacturer	48
Table 1	– Converter Types	15
Table 2	– Minimum insulation level	20
Table 3	– Letter symbols for cooling mediums and heat transfer agents	22
Table 4	– Letter symbols for methods of circulation	23
Table 5	– Summary of tests	27
Table A.1	– Standardized duty classes	35
Table B.1	– Example values	37

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RAILWAY APPLICATIONS – ELECTRONIC POWER CONVERTERS FOR
FIXED INSTALLATIONS
Part 1 GENERAL REQUIREMENTS****FOREWORD**

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International Standard IEC 62590 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways.

The text of this standard is based on the following documents:

FDIS	Report on voting
9/XXXX/FDIS	9/XXXX/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

This document in conjunction with the other parts of IEC 62590 will replace the IEC 62589 and the former IEC 62590.

- a) Split into common requirements and special requirements for different converters
- b) Interface Model for the different Systems connected
- c) Split into circuits with their requirements like insulation coordination
- d) Energy efficiency addressed
- e) More to be added

INTRODUCTION

Semiconductor converters for traction power supply differ from other converters for industrial use due to special electrical service conditions and due to the large range of load variation and the peculiar characteristics of the load.

For these reasons IEC 60146 series does not fully cover the requirements of railway applications and the decision was taken to have a specific series of standards for this use.

Specific requirements for the design of converter transformers for fixed installations of railway applications are specified in IEC 62695.

This document defines common vocabulary and requirements. Other parts will cover different applications.

IEC 62590-1 Railway applications – Electronic Power Converters for fixed installations– Part 1: General requirements

IEC 62590-2-1 Railway applications - Electronic Power Converters for fixed installations – Part 2-1: DC traction applications - Uncontrolled rectifiers

IEC 62590-2-2 Railway applications – Electronic Power Converters for fixed installations – Part 2-2: DC traction applications – Controlled converters

IEC 62590-3-1 Railway applications – Electronic Power Converters for fixed installations – Part 3-1: AC traction applications – Electronic power compensators

IEC 62590-3-2 Railway applications – Electronic Power Converters for fixed installations – Part 3-2: AC traction applications – Static frequency converters

RAILWAY APPLICATIONS – ELECTRONIC POWER CONVERTERS FOR FIXED INSTALLATIONS

Part 1 GENERAL REQUIREMENTS

1 Scope

This document specifies the common requirements and definitions for all power converter applications in fixed installations for power supply of railway systems.

This document applies to fixed installations of following electric traction systems:

- railway networks,
- metropolitan transport networks including metros, tramways, trolleybuses and fully automated transport systems, magnetic levitated transport systems, electric road systems.

This document applies to AC/DC converters, DC converters and AC converters. Converters for improvement of power quality and for energy saving are also included.

Converters connected to electric traction systems feeding 3AC, 1AC or DC systems for auxiliary purpose are not in the scope of this document but some aspects such as insulation coordination and railway specific conditions may be referred to.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 60146-1-1, *Semiconductor converters - General requirements and line commutated converters - Part 1-1: Specification of basic requirements*

IEC TR 60146-1-2, *Semiconductor converters – General requirements and line commutated converters – Part 1-2: Application guide*

IEC 60146-2, *Semiconductor converters - Part 2: Self-commutated semiconductor converters including direct d.c. converters*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

IEC 60850, *Railway applications - Supply voltages of traction systems*

IEC 61000-3 (all parts), *Electromagnetic compatibility (EMC), Limits*

IEC 61936-1, *Power installations exceeding 1 kV AC and 1,5 kV DC - Part 1: AC*

IEC 61992-7-1, *Railway applications - Fixed installations - DC switchgear - Part 7-1: Measurement, control and protection devices for specific use in d.c. traction systems - Application guide*