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Powertrack systems - Part 1: General requirements (IEC 61534-1:2011)

Stromschiensysteme - Teil 1: Allgemeine Anforderungen (IEC 61534-1:2011)

Systemes de conducteurs préfabriqués - Partie 1: Exigences générales (CEI 61534-1:2011)

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61534-1

July 2011

ICS 29.060.10; 29.120.10

Supersedes EN 61534-1:2003

English version

**Powertrack systems -
Part 1: General requirements
(IEC 61534-1:2011)**

Systèmes de conducteurs préfabriqués -
Partie 1: Exigences générales
(CEI 61534-1:2011)

Stromschiensysteme -
Teil 1: Allgemeine Anforderungen
(IEC 61534-1:2011)

This European Standard was approved by CENELEC on 2011-06-22. 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.

<https://standards.iteh.ai/catalog/standards/sist/8c43dd1b-9568-49b6-9a33-378a0d77a5e8/en-61534-1:2011>

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, Bulgaria, Croatia, 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

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Foreword

The text of document 23A/630/FDIS, future edition 2 of IEC 61534-1, prepared by SC 23A, Cable management systems, of IEC TC 23, Electrical accessories, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61534-1 on 2011-06-22.

This European Standard supersedes EN 61534-1:2003.

The main changes from EN 61534-1:2003 are as follows:

- updated normative references (Clause 2);
- changes to the number of samples to be tested (Subclause 5.3);
- inclusion of a short circuit test (New Clause 18);
- changes to external influences (Clause 21).

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

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) | 2012-03-22 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2014-06-22 |

Annex ZA has been added by CENELEC.
<https://standards.iteh.ai/catalog/standards/sist/8c43dd1b-9568-49b6-9a33-594bdd0d594d/sist-en-61534-1-2011>

Endorsement notice

The text of the International Standard IEC 61534-1:2011 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 60364-4-44:2007 | NOTE Harmonized as HD 60364-4-444:2010 (modified). |
| IEC 60439-2:2000 | NOTE Harmonized as EN 60439-2:2000 (not modified). |
| IEC 60570:2003 | NOTE Harmonized as EN 60570:2003 (modified). |
| IEC 60664-1:2007 | NOTE Harmonized as EN 60664-1:2007 (not modified). |

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

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

| Publication | Year | Title | EN/HD | Year |
|---------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------|
| IEC 60038 (mod) | 2009 | IEC standard voltages | EN 60038 ¹ | 2011 |
| IEC 60060-1 | 2010 | High-voltage test techniques - Part 1: General definitions and test requirements | EN 60060-1 | 2010 |
| IEC 60068-2-52 | - | Environmental testing - Part 2: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution) | EN 60068-2-52 | - |
| IEC 60068-2-75 | - | Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests | EN 60068-2-75 | - |
| IEC 60112 | 2003 | Method for the determination of the proof and the comparative tracking indices of solid insulating materials | EN 60112 | 2003 |
| IEC 60127-1 | 2006 | Miniature fuses - Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links | EN 60127-1 | 2006 |
| IEC 60269-1 | 2006 | Low-voltage fuses - Part 1: General requirements | EN 60269-1 | 2007 |
| IEC 60529 | 1989 | Degrees of protection provided by enclosures (IP Code) | EN 60529 + corr. May | 1991 1993 |
| IEC 60695-2-11 | 2000 | Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products | EN 60695-2-11 | 2001 |
| IEC 60695-10-2 | 2003 | Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test | EN 60695-10-2 | 2003 |
| IEC 60695-11-2 | 2003 | Fire hazard testing - Part 11-2: Test flames - 1 kW nominal pre-mixed flame - Apparatus, confirmatory test arrangement and guidance | EN 60695-11-2 | 2003 |
| IEC 60884-1 + A1 | 2002 2006 | Plugs and socket-outlets for household and similar purposes - Part 1: General requirements | - | - |
| IEC 60998-1 (mod) | 2002 | Connecting devices for low-voltage circuits for household and similar purposes - Part 1: General requirements | EN 60998-1 | 2004 |

¹ At draft stage

| <u>Publication</u> | <u>Year</u> | <u>Title</u> | <u>EN/HD</u> | <u>Year</u> |
|------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| IEC 60998-2-3 (mod) | 2002 | Connecting devices for low-voltage circuits for household and similar purposes - Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units | EN 60998-2-3 | 2004 |
| IEC 60999-1 | 1999 | Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm ² up to 35 mm ² (included) | EN 60999-1 | 2000 |
| IEC 60999-2 | 2003 | Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 2: Particular requirements for clamping units for conductors above 35 mm ² up to 300 mm ² (included) | EN 60999-2 | 2003 |
| IEC 61032 | 1997 | Protection of persons and equipment by enclosures - Probes for verification | EN 61032 | 1998 |
| IEC 61210 (mod) | 2010 | Connecting devices - Flat quick-connect terminations for electrical copper conductors - Safety requirements | EN 61210 | 2010 |
| IEC 60417 | Data base | Graphical symbols for use on equipment | - | - |
| ISO 1456 | 2009 | Metallic and other inorganic coatings - Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium | EN ISO 1456 | 2009 |
| ISO 2081 | 2008 | Metallic and other inorganic coatings - Electroplated coatings of zinc with supplementary treatments on iron or steel | EN ISO 2081 | 2008 |
| ISO 2093 | 1986 | Electroplated coatings of tin - Specification and test methods | - | - |



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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Powertrack systems –
Part 1: General requirements

Systèmes de conducteurs préfabriqués –
Partie 1: Exigences générales

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

POWERTRACK SYSTEMS –**Part 1: General requirements**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61534-1 has been prepared by subcommittee 23A: Cable management systems, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 2003 and constitutes a technical revision. The main changes from the previous edition are as follows:

- updated normative references (Clause 2);
- changes to the number of samples to be tested (Subclause 5.3);
- inclusion of a short circuit test (New Clause 18);
- changes to external influences (Clause 21).

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

| FDIS | Report on voting |
|--------------|------------------|
| 23A/630/FDIS | 23A/631/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.

A list of all the parts in the IEC 61534 series, under the general title *Powertrack systems*, can be found on the IEC website.

The following difference exists in the countries indicated below:

- Table 4, first column, first line: the 10 A rated terminal should be capable of clamping 1 mm² as a minimum (UK);
- Australia has specific wiring rules covering socket-outlets to be switched. In Australia, AS/NZS 3000 contains requirements for switching devices to be used in Australian and New Zealand electrical installations;
- 9.5: in Australia, fuses and fuse-links are not to be used.

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, [SIST EN 61534-1:2011](#)
- withdrawn, <https://standards.iteh.ai/catalog/standards/sist/8c43dd1b-9568-49b6-9a33-594bddd0d594d/sist-en-61534-1-2011>
- replaced by a revised edition, or
- amended.

INTRODUCTION

Particular requirements for specific types of powertrack systems will be specified in the relevant parts 2 of IEC 61534.

For a specific type of powertrack system the requirements of Part 1 of the standard are to be considered, together with the particular requirements of the appropriate Part 2, which will supplement or modify some of the corresponding clauses in Part 1 to provide the complete requirements for that type of system.

Part 1 shall apply unless supplemented or modified by an appropriate Part 2.

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POWERTRACK SYSTEMS –

Part 1: General requirements

1 Scope

1.1 This part of IEC 61534 specifies general requirements and tests for powertrack (PT) systems with a rated voltage not exceeding 277 V a.c. single phase, or 480 V a.c. two or three phase 50 Hz/60 Hz with a rated current not exceeding 63 A. These systems are used for distributing electricity in household, commercial and industrial premises.

1.2 Powertrack systems, according to this standard, are intended for use under the following conditions:

- an ambient temperature in the range -5 °C to $+40\text{ °C}$, the average value over a 24 h period not exceeding 35 °C ;
- a situation not subject to a source of heat likely to raise temperatures above the limits specified above;
- an altitude not exceeding 2000 m above sea level;
- an atmosphere not subject to excessive pollution by smoke, chemical fumes, prolonged periods of high humidity or other abnormal conditions.

In locations where special conditions prevail, as in ships, vehicles and the like and in hazardous locations, for instance, where explosions are liable to occur, special constructions may be necessary.

<https://standards.iteh.ai/catalog/standards/sist/8c43dd1b-9568-49b6-9a33-594bdd0d594d/sist-en-61534-1-2011>

This standard does not apply to

- cable trunking systems and cable ducting systems covered by IEC 61084 [8] ¹;
- busbar trunking systems covered by IEC 60439-2 [5];
- electrical supply track systems for luminaires covered by IEC 60570 [6].

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.

IEC 60038:2009, *IEC standard voltages*

IEC 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60068-2-52, *Environmental testing – Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium, chloride solution)*

IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

¹ Figures in square brackets refer to the bibliography.

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60127-1:2006, *Miniature fuses – Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links*

IEC 60269-1:2006, *Low-voltage fuses – Part 1: General requirements*

IEC 60417, *Graphical symbols for use on equipment*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP code)*²

IEC 60695-2-11:2000, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods-Glow-wire flammability test methods for end-products*

IEC 60695-11-2:2003, *Fire hazard testing – Part 11-2: Test flames – 1 kW nominal pre-mixed flame – Apparatus, confirmatory test arrangement and guidance*

IEC 60695-10-2:2003, *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test*

IEC 60884-1:2002, *Plugs and socket outlets for household and similar purposes – Part 1: General requirements*
Amendment 1 (2006)³

IEC 60998-1:2002, *Connecting devices for low-voltage circuits for household and similar purposes – Part 1: General requirements*

IEC 60998-2-3:2002, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-3: Particular requirements for connecting devices as separate entities with insulation piercing clamping units*

IEC 60999-1:1999, *Connecting devices – Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm² up to 35 mm² (included)*

IEC 60999-2:2003, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 2: Particular requirements for clamping units for conductors above 35 mm² up to 300 mm² (included)*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61210:2010, *Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements*

ISO 1456:2009, *Metallic and other inorganic coatings – Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium*

ISO 2081:2008, *Metallic and other inorganic coatings – Electroplated coatings of zinc with supplementary treatments on iron or steel*

ISO 2093:1986, *Electroplated coatings of tin – Specification and test methods*

² There exists a consolidated edition 2.1 (2001) that includes IEC 60529 (1989) and its Amendment 1 (1999).

³ There exists a consolidated edition 3.1 (2006) that includes IEC 60884-1 (2002) and its Amendment 1 (2006).