IEC 61534-21

Edition 2.0 2014-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Powertrack systems –
Part 21: Particular requirements for powertrack systems intended for wall and ceiling mounting

Systèmes de conducteurs préfabriqués –
Partie 21: Exigences particulières pour les systèmes de conducteurs préfabriqués destinés au montage sur des murs et des plafonds

IEC 61534-21:2014-06(en-fr)

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POWERTRACK SYSTEMS –

Part 21: Particular requirements for powertrack systems intended for wall and ceiling mounting

FOREWORD

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International Standard IEC 61534-21 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 2006 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- Clauses 18 to 22 have been adapted to IEC 61534-1:2011 and include short-circuit test requirements;
- Additional classification, terms and requirements for wall powertrack (PT) systems mounted at the skirting level (close to the floor) position.

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

FDIS	Report on voting
23A/701/FDIS	23A/707/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.

This standard is to be used in conjunction with IEC 61534-1:2011, *Powertrack systems – Part 1: General requirements.*

This Part 21 supplements or modifies the corresponding clauses of IEC 61534-1. Where a particular clause or subclause of IEC 61534-1:2011 is not mentioned in this Part 21, that clause or subclause applies as far as is reasonable. Where this Part 21 states "addition" or "replacement", the relevant text of IEC 61534-1:2011 is to be adapted accordingly.

Subclauses, tables and figures which are in addition to those in IEC 61534-1:2011 are numbered starting with 101.

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

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.

POWERTRACK SYSTEMS –

Part 21: Particular requirements for powertrack systems intended for wall and ceiling mounting

1 Scope

Clause 1 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014 is applicable except as follows:

1.1 *Addition:*

This part of IEC 61534 specifies the particular requirements and tests for PT systems intended for mounting on walls and/or ceiling. They may be installed flush or semi-flush, surface mounted, suspended or spaced away from the surface using fixing devices.

2 Normative references

Clause 2 of IEC 61534-1:2011 is applicable except as follows:

Addition:

IEC 61534-1:2011, *Powertrack systems – Part 1: General requirements*
IEC 61534-1:2011/AMD1:2014

3 Terms and definitions

Clause 3 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014 is applicable except as follows:

Additional terms and definitions:

3.101
wall PT system
PT system which is suitable for mounting on a vertical surface or a vertical structure directly or with the use of fixing devices

3.102
ceiling PT system
PT system which is suitable for mounting or suspending beneath a horizontal surface or horizontal structure directly or with the use of fixing devices

3.103
fixing devices
system component used for the mechanical connection of the PT system to the supporting surface or supporting structure

3.104
external load
mechanical load applied to the PT system from outside and not due to the mass of the system components

3.105
suspension means
mechanism for supporting a load (e.g. a luminaire) that hangs from the PT system

3.106
skirting PT system
PT system which is suitable for mounting on the lower part of a wall close to the floor

4 General requirements

Clause 4 of IEC 61534-1:2011 is applicable.

5 General notes on tests

Clause 5 of IEC 61534-1:2011 is applicable except as follows:

5.3 *Addition:*

3 samples: subclause 14.3.101

3 samples: subclause 14.3.102

3 samples: subclause 14.3.103

6 Ratings

Clause 6 of IEC 61534-1:2011 is applicable.

7 Classification

Clause 7 of IEC 61534-1:2011 is applicable except as follows:

Additional subclauses:

7.101 According to external load withstand capability

7.101.1 Wall PT system

7.101.1.1 Wall PT system not intended to withstand an external load

7.101.1.2 Wall PT system capable of withstanding an external load from above

7.101.2 Ceiling PT system

7.101.2.1 Ceiling PT system not intended to withstand an external load

7.101.2.2 Ceiling PT system capable of withstanding an external load from above

7.102 According to provision for suspended loads

7.102.1 PT System without provision for suspended loads

7.102.2 PT System with provision for suspended loads

7.103 According to floor treatment when the PT system is mounted at the skirting position

7.103.1 Dry-treatment of floor

7.103.2 Wet-treatment of floor

8 Marking and documentation

Clause 8 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014 is applicable except as follows:

8.5 *Addition of the following dashed items:*

– for PT system according to 7.101.1.2 and 7.101.2.2, the maximum load in kg which can be withstood

– for PT system according to 7.102.2, the maximum load in kg which can be suspended

9 Construction

Clause 9 of IEC 61534-1:2011 is applicable.

10 Clearances, creepage distances and solid insulation

Clause 10 of IEC 61534-1:2011 is applicable.

11 Protection against electric shock

Clause 11 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014 is applicable.

12 Terminals and terminations

Clause 12 of IEC 61534-1:2011 is applicable.

13 Screws, current carrying parts and connections

Clause 13 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014 is applicable.

14 Mechanical strength

Clause 14 of IEC 61534-1:2011 is applicable except as follows:

14.3 Static load test

Delete subclauses 14.3.1, 14.3.2 and 14.3.3.

Additional subclauses:

14.3.101 External load test

PT systems shall withstand mechanical stresses applied to the PT system.

Compliance is checked by the following test.

At least two lengths of the PT system are joined together including the electrical connection and installed according to the manufacturer's instructions to a rigid support; the joint shall be placed midway between the fixing devices.

A steel plate with a length of (150 ± 20) mm, a width not less than the PT system and a thickness of (5 ± 1) mm is positioned on the upper surface of the PT system centrally at the midpoint between the supports. For classifications 7.101.1.1 and 7.101.2.1, a vertical force is gradually applied on the steel plate up to (350 ± 10) N over a period of (60 ± 1) s and maintained for (60 ± 1) min. For classifications according to 7.101.1.2 and 7.101.2.2, a vertical force is gradually applied on the steel plate up to (750 ± 10) N or with a force declared by the manufacturer ± 2 %, whichever is the higher over a period of (60 ± 1) s and maintained for (60 ± 1) min.

During the tests, the sample shall not break and shall neither have parts that have worked loose, nor shall it show any deformation likely to impair electrical safety.

After the test:

– The sample shall comply with Clause 10 and 11.1 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014.
– There shall be no permanent deformation, which would prevent the correct insertion and withdrawal of the tap-off units.
– The samples shall withstand the test according to 15.2 but without the pre-conditioning of 15.1, and the tests of 11.3 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014.

14.3.102 PT systems with provision for suspended loads

PT systems classified according to 7.102.2 shall withstand mechanical loads applied to the suspension means in normal use.

Compliance is checked by the following test.

The provision for the suspension means is installed as for normal use according to the manufacturer's instructions. Screwed connections, if any, intended to provide mechanical support of the suspension means are tightened to the torque given in the relevant column of Table 5 of IEC 61534-1:2011 if not specified by the manufacturer.

The suspension means is then loaded, without jerks, with a force declared by the manufacturer ± 2 % or if no force is declared then the test shall be performed with a force of (250 ± 5) N , for (24 ± 1) h.

During the test, the PT system and the suspension means shall not become detached from one another and shall show no damage, which leads to non-compliance with this standard.

14.3.103 PT systems with tap-off units

In normal use, the construction of the tap-off unit shall be such as to prevent disconnection from the PT or live parts becoming accessible.

Compliance is checked by the following test.

The tap-off unit is inserted as in normal use 10 times and withdrawn 10 times in the tap-off outlet with the PT system installed in normal use as declared by the manufacturer.

The tap-off unit is inserted once more into the tap-off outlet as in normal use and a withdrawal force of (30 ± 1) N is applied for (60 ± 5) s parallel to the force on the tap-off unit in normal use as declared by the manufacturer.

The tap-off unit shall not become disconnected from the PT and live parts shall not become accessible when tested according to 11.1.1.1 of IEC 61534-1:2011 and IEC 61534-1:2011/AMD1:2014.

15 Insulation resistance test and dielectric strength test

Clause 15 of IEC 61534-1:2011 is applicable.

16 Normal operation

Clause 16 of IEC 61534-1:2011 is applicable.

17 Temperature rise

Clause 17 of IEC 61534-1:2011 is applicable.

18 Short-circuit protection and short-circuit withstand strength

Clause 18 of IEC 61534-1:2011 is applicable.

19 Resistance to heat

Clause 19 of IEC 61534-1:2011 is applicable.

20 Fire hazard

Clause 20 of IEC 61534-1:2011 is applicable.

21 External influences

Clause 21 of IEC 61534-1:2011 is applicable except as follows:

Delete subclause 21.1.3.

Additional subclause:

21.2.101 Protection against ingress of water for wet treatment of the floor

Where PT systems are fitted at the skirting position and the floor is subject to wet treatment then the PT system shall have a minimum degree of protection of IP X4.

22 Electromagnetic compatibility

Clause 22 of IEC 61534-1:2011 is applicable.