



SLOVENSKI STANDARD

oSIST prEN IEC 61810-7-15:2023

01-oktober-2023

Električni releji - Preskusi in meritve - 7-15. del: Čvrstost terminalov

Electrical relays - Tests and Measurements - Part 7-15: Robustness of Terminals

Relais électriques - Essais et mesurages - Partie 7-15: Robustesse des bornes

Ta slovenski standard je istoveten z: prEN IEC 61810-7-15:2023

<https://standards.iteh.ai/catalog/standards/sist/dac83e7f-5d77-434d-9f17-156aa271af97/osist-pren-iec-61810-7-15-2023>

ICS:

29.120.70 Releji Relays

oSIST prEN IEC 61810-7-15:2023 en



94/922/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:
IEC 61810-7-15 ED1

DATE OF CIRCULATION:
2023-08-18

CLOSING DATE FOR VOTING:
2023-11-10

SUPERSEDES DOCUMENTS:
94/814/CD, 94/909/CC

IEC TC 94 : ELECTRICAL RELAYS	
SECRETARIAT: Austria	SECRETARY: Mr Bernhard Spalt
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING <input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING	
Attention IEC-CENELEC parallel voting 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.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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:

Electrical relays – Tests and Measurements – Part 7-15: Robustness of Terminals

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

CONTENTS

1		
2		
3	FOREWORD	3
4	1 Scope	5
5	2 Normative references	5
6	3 Terms and definitions	6
7	4 Test procedure	7
8	4.1 Purpose	7
9	4.2 Procedure	7
10	4.3 Conditions	7
11	5 Evaluation	7
12	Annex T (informative) Test report.....	8
13	Bibliography	9
14		

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN IEC 61810-7-15:2023](https://standards.iteh.ai/catalog/standards/sist/dac83e7f-5d77-434d-9f17-156aa27faf97/osist-pren-iec-61810-7-15-2023)

<https://standards.iteh.ai/catalog/standards/sist/dac83e7f-5d77-434d-9f17-156aa27faf97/osist-pren-iec-61810-7-15-2023>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ALL-OR-NOTHING ELECTRICAL RELAYS – TESTS AND MEASUREMENTS**Part 7-15: Robustness of Terminals****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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 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.

IEC 61810-7 has been prepared by subcommittee WG3: Maintenance of basic relay standards, of IEC technical committee 94: All-or-nothing electrical relays. It is an International Standard.

The text of this International Standard is based on the following documents:

CD	CC
94/814/CD	94/909/CC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at <http://www.iec.ch/standardsdev/publications>.

67 A list of all parts of IEC 61810 series, published under the general title *Electromechanical*
68 *elementary relays*, can be found on the IEC website.

69 This International Standard is to be used in conjunction with IEC 61810-1:2015.

70 The committee has decided that the contents of this document will remain unchanged until the
71 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
72 specific document. At this date, the document will be

- 73 • reconfirmed,
- 74 • withdrawn,
- 75 • replaced by a revised edition, or
- 76 • amended.

77

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN IEC 61810-7-15:2023](https://standards.iteh.ai/catalog/standards/sist/dac83e7f-5d77-434d-9f17-156aa27faf97/osist-pren-iec-61810-7-15-2023)

<https://standards.iteh.ai/catalog/standards/sist/dac83e7f-5d77-434d-9f17-156aa27faf97/osist-pren-iec-61810-7-15-2023>

ELECTRICAL RELAYS – TESTS AND MEASUREMENTS

Part 7-15: Robustness of Terminals

1 Scope

This part of IEC 61810-7 is used for testing all kind of relays within the scope of technical committee 94 and shall evaluate their ability to perform under expected conditions of transportation, storage and all aspects of operational use.

The tests stated here within shall be done with test conditions and appropriate severities, as well as suitable measurements conditions.

The object of this test is to define a standard test method to ensure that the DUT performs satisfactorily at its specified energization values throughout the defined temperature range.

It is used to determine the ability of DUT terminals to withstand direct axial pulls, bending or twisting as they can be present in assembled configurations or during handling. In addition, it covers nuts and threaded terminals with regard to their ability to withstand torques likely to be experienced during normal assembly operations.

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 60068-2-21, Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices

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

IEC 61810-1:2015, Electromechanical elementary relays – Part 1: General and safety requirements

IEC 61810-1:2015/AMD1:2019, Amendment 1 - Electromechanical elementary relays - Part 1: General and safety requirements

IEC 61810-7-0, All-or-nothing relays – Tests and measurements – Part 7-0: Testing – General and Guidance

IEC 61810-7-1, All-or-nothing relays – Tests and measurements – Part 7-1: Visual Inspection and check of dimensions

IEC 61810-7-3, All-or-nothing relays – Tests and measurements – Part 7-3: Relay coil properties

118 IEC 61810-7-6, All-or-nothing relays – Tests and measurements – Part 7-6: Contact-circuit
119 resistance

120 **3 Terms and definitions**

121 For the purposes of this document, the terms and definitions given in Clause 3 of IEC 61810-7-
122 0 apply.

123 ISO and IEC maintain terminological databases for use in standardization at the following
124 addresses:

- 125 • IEC Electropedia: available at <http://www.electropedia.org/>
- 126 • ISO Online browsing platform: available at <http://www.iso.org/obp>

127
128

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN IEC 61810-7-15:2023](https://standards.iteh.ai/catalog/standards/sist/dac83e7f-5d77-434d-9f17-156aa27faf97/osist-pren-iec-61810-7-15-2023)
[https://standards.iteh.ai/catalog/standards/sist/dac83e7f-5d77-434d-9f17-
156aa27faf97/osist-pren-iec-61810-7-15-2023](https://standards.iteh.ai/catalog/standards/sist/dac83e7f-5d77-434d-9f17-156aa27faf97/osist-pren-iec-61810-7-15-2023)

4 Test procedure

4.1 Purpose

To determine the ability of terminals to withstand direct axial pulls, bending or twisting. In addition, it covers nuts and threaded terminals with regard to their ability to withstand torques likely to be experienced during normal assembly operations.

4.2 Procedure

Screw terminals and screwless terminals shall be tested as specified in IEC 60999-1:1999, clause 5 and clause 9.

Flat quick-connect terminations shall be tested as specified in IEC 61210:2010, clause 7, clause 8.1 and clause 8.2.

All other terminations or integral mounting elements of DUTs shall be subjected to test Ua1, Ua2, Ub, Uc, Ud or Ue (for SMD terminals) of IEC 60068-2-21, as appropriate.

Three DUT shall be tested. On every DUT at least three terminations of same size and type shall be tested.

If the tests are carried out on a complete DUT, testing on one termination shall not influence or compromise the test results of the other terminations.

If the required number of tests is not achievable with a DUT (e.g. not sufficient number of terminals per DUT or the testing has impact on other terminals), additional DUT shall be used.

4.3 Conditions

The DUT shall be in a new and clean condition, mounted as in service or specified by the manufacturer. The test shall be performed under applicable reference conditions given in Clause 4 of IEC 61810-7-0.

The conditions to be specified are the following:

- a) applicable tests of IEC 60068-2-21, or IEC 60999-1, or IEC 61210, and corresponding loads;
- b) number of terminals to be tested, if larger than three, acc. to IEC 61810-7-0.

5 Evaluation

- evaluation according to the requirements of the chosen test from IEC 60068-2-21, or IEC 60999-1, or IEC 61210, respectively,
- visual inspection and check of dimensions as specified in IEC 61810-7-1,
- coil resistance as specified in IEC 61810-7-3,
- contact circuit resistance as specified in IEC 61810-7-6,
- other final measurements, if required.

The test samples should not show any sign of damage or malfunction. All parameters should be within the manufacturer specification.

Annex A **(informative)**

Test report

If a test report is issued, this report shall include all information needed to repeat the test in the same way as it was carried out.

The test report shall include at least

- Number of DUTs under test, numbered individually;
- Initial condition of each of the DUTs;
- Test procedure applied acc. to clause 4.2
- Test conditions used acc. to clauses 4.3
- Evaluation of each of the DUT individually, as defined under clause 5;
- Test equipment and setup used during the test;
- Test equipment used for the evaluation;
- Date of test and date of report;
- Testing facility, if required.