SLOVENSKI STANDARD
oSIST prEN IEC 61810-7-30:2023

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Električni releji - Preskusi in meritve - 7-30. del: Vzdrževanje kontakta (zapoznelo sproščanje)

Electrical relays - Tests and Measurements - Part 7-30: Contact sticking (delayed release)

Ta slovenski standard je istoveten z: **prEN IEC 61810-7-30:2023**

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94/933/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 61810-7-30 ED1	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2023-08-18	**2023-11-10**
SUPERSEDES DOCUMENTS:	
94/817/CD, 94/917/CC	

IEC TC 94 : ELECTRICAL RELAYS	
SECRETARIAT: Austria	SECRETARY: Mr Bernhard Spalt
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 **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.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

Electrical relays – Tests and Measurements – Part 7-30: Contact sticking (delayed release)

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICAL RELAYS – TESTS AND MEASUREMENTS

Part 7-30: Contact sticking (delayed release)

FOREWORD

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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
94/817/CD	94/917/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.

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

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

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

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- withdrawn,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

ELECTRICAL RELAYS – TESTS AND MEASUREMENTS

Part 7-30: Contact sticking (delayed release)

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.

This part provides criteria to check that closed contacts of a DUT do not fail to open within a specified time, due to, for example, effects of remanence, chemical effects, or high temperature.

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 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

IEC 61810-7-8, All-or-nothing relays – Tests and measurements – Part 7-8: Timing tests

3 Terms and definitions

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

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 Test procedure

4.1 Purpose

To check that closed contacts of a DUT do not fail to open within a specified time, due to, for example, effects of remanence, chemical effects, or high temperature.

4.2 Procedure

The DUT under test 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.

At the beginning of the test, the coil shall be supplied with an energizing quantity from 4.3 g) as described in the end of this section and the release time shall be measured as in IEC 61810-7-8.

The DUTs shall be energized for 24 h at the upper limit of its operative range, starting at room temperature. After the start, the temperature shall be increased to and maintained for the remaining time at the maximum operating temperature. Unless otherwise specified, the temperature change from room temperature to the maximum operating temperature shall be done at a rate of (5±1) K/min.

Further climate scenarios may be applied in addition, if applicable. References for climatic sequences are given in the IEC 60068-2 series, for example:

- IEC 60068-2-1 – Environmental testing - Part 2-1: Tests - Test A: Cold;
- IEC 60068-2-2 – Environmental testing - Part 2-2: Tests - Test B: Dry heat;
- IEC 60068-2-14 – Environmental testing - Part 2-14: Tests - Test N: Change of temperature;
- IEC 60068-2-30 – Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle);
- IEC 60068-2-38 – Environmental testing - Part 2-38: Tests - Test Z/AD: Composite temperature/humidity cyclic test;
- IEC 60068-2-78 – Environmental testing - Part 2-78: Tests – Test Cab: Damp heat, steady state.

No load shall be applied to the contacts, unless the load necessary for the following release time measurement. At the end of the test period, the DUT shall cool down to the reference conditions. Handling of the DUT shall be avoided. If any handling of the DUT is necessary, this shall be done with special care to not impact the following measurements by changing the DUT properties and structure.

After settlement to reference conditions, the DUT shall be supplied with an energizing quantity from 4.3 g) as follows to change to release condition and the release time shall be measured as in IEC 61810-7-8.

Energizing quantity supply to determine release time:

- Monostable DUTs: rated release voltage or de-energize;
- Bistable DUTs: reset voltage.

4.3 Conditions

The conditions to be specified are the following:

a) number of DUTs under test, refer to IEC 61810-7-0;
b) upper limit of the operative range;
c) limit of release time;
d) load applied for measurement of release time;
e) maximum operating temperature;
f) temperature gradient used to increase temperature to maximum operating;
g) energization of the DUT coil, shall be at rated values unless otherwise stated by the manufacturer.

5 Evaluation

After the tests, the following evaluation shall be done:

- visual inspection as specified in IEC 61810-7-1,
- release time before and after the test, evaluate the variation,
- coil resistance as specified in IEC 61810-7-3,
- contact circuit resistance as specified in IEC 61810-7-6,
- other final measurements, if required.

Measured values shall comply with the specifications. No contact sticking shall be observed.