SLOVENSKI STANDARD
oSIST prEN IEC 61810-7-25:2023

01-september-2023

Električni releji - Preskusi in meritve -7-25. del: Magnetno motenje

Electrical relays - Tests and Measurements - Part 7-25: Magnetic interference

Ta slovenski standard je istoveten z: **prEN IEC 61810-7-25:2023**

ICS:

29.120.70 Releji Relays

oSIST prEN IEC 61810-7-25:2023 **en**

94/882/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 61810-7-25 ED1	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2023-07-07	**2023-09-29**
SUPERSEDES DOCUMENTS:	
94/789/CD, 94/868/CC	

IEC TC 94 : ELECTRICAL RELAYS

SECRETARIAT:	SECRETARY:
Austria	Mr Bernhard Spalt
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 121,SC 121A	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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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.

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TITLE:

Electrical relays – Tests and Measurements – Part 7-25: Magnetic interference

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Electrical relays – Testing and measurement

Part 7-25: Magnetic interference

FOREWORD

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The International Standards of the IEC 61810 have been prepared by IEC technical committee 94: All-or-nothing electrical relays.

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

CD	CC
94/789/CD	94/868/CC

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

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

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

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

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

70 • reconfirmed,
71 • withdrawn,
72 • replaced by a revised edition, or
73 • amended.

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Electrical relays – Tests and Measurements

Part 7-25: Magnetic interference

1 Scope

This part of IEC 61810-7 is used for testing along with the appropriate severities and conditions for measurements and tests designed to assess the ability of specimens to perform under expected conditions of transportation, storage and all aspects of operational use.

The object of this test is to define a standard test method for investigate the influence between relays under operating conditions and the influence back to other relays in the neighbourhood.

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 61810-7-4, *Electrical relays – Tests and Measurements – Part 7-4: Dielectric strength test*

IEC 61810-7-7, *Electrical relays – Tests and Measurements – Part 7-7: Functional test*

3 Terms and definitions

Clause 3 of IEC 61810-7-0 is applicable.

4 Test procedure

4.1 Purpose

To check that the values of functional performance of the relay remain within specified limits when the relay is subjected to the effects of external magnetic inductions.

4.2 Procedure

4.2.1 Method 1:

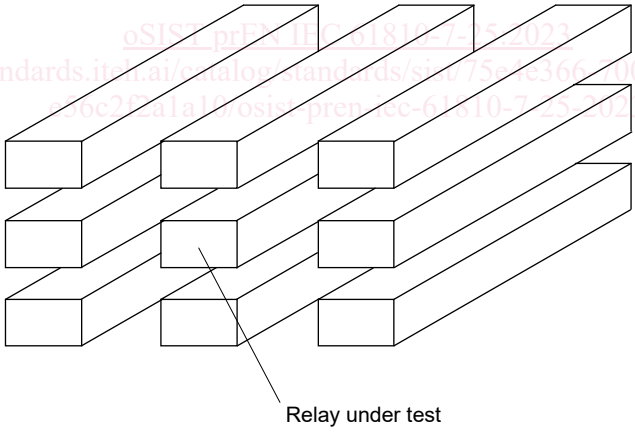
The relay shall be mounted by suitable non-magnetic means within the central volume of a test coil. The axis of maximum sensitivity of the relay shall be aligned with the longitudinal axis of the test coil. Operate and release values shall be measured according to IEC 61810-7-7 in zero magnetic field in air and

- for magnetically shielded relays: in 8×10^3 A/m;
- for all other relays: in $0{,}8 \times 10^3$ A/m,

magnetic field of both polarities.

4.2.2 Method 2:

The relay under test and eight similar relays (of the same type) shall be mounted in the same physical orientation by non-magnetic means, as shown in Figure 1, unless otherwise specified by the manufacturer. Operate and release values of the relay under test shall be measured as specified in IEC 61810-7-7, with the coils of the eight outer relays energized at rated voltage, and with the coils not energized. The magnetic polarity of each relay shall be similarly orientated.



IEC 290/06

Figure 1 – Mounting array for adjacent similar relays

The relays shall be placed in all possible usage combinations e.g. see Figure 2.

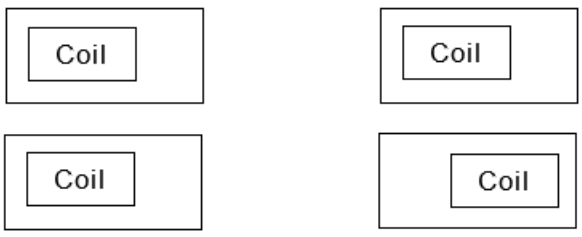
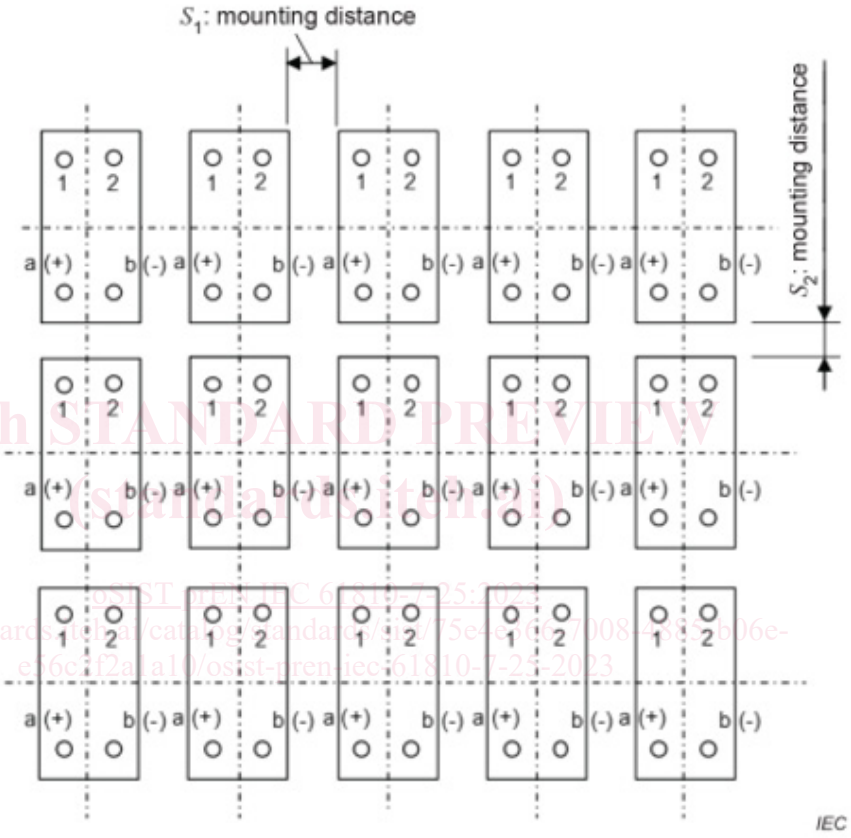


Figure 2 – Mounting array for adjacent similar relays

For reed relays the following applies:

The manufacturer shall declare different values for functional operate voltage and release voltage between single mounting and multi mounting (i.e. reed relays are mounted in array arrangement).

The mounting grid pattern shall be as specified by the manufacturer. See Figure 3 for example, all relevant details of the test arrangement (e.g., S_1: horizontal mounting distance and S_2: vertical mounting distance and coil polarity) are to be indicated in the test report.



Where, 1, 2: contact terminals, a, b: coil terminals

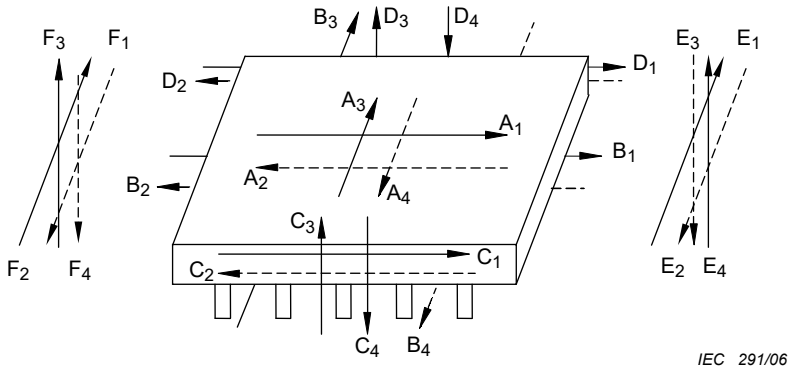
S_1: horizontal mounting distance between relays, S_2: vertical mounting distance between relays

Figure 3 - Example of test arrangement for multi maounting

4.2.3 Method 3:

The relay to be tested shall be mounted by non-magnetic means. A conducting wire of 0,5 mm diameter shall be placed on the test relay surface in 24 directions as shown in Figure 3. One current impulse shall be applied in each of these directions. Operate and release values of the relay under test shall be measured as specified in accordance to IEC 61810-7-7 in each of the wire positions after the respective current impulse. The following current impulse shall be used, unless otherwise specified by the manufacturer:

- impulse shape: in conformity with the voltage impulses as specified in IEC 61810-7-4;
- test current: 1 kA.



A_1 to F_4 Test current directions

Figure 4 – Directions of the test current for magnetic interference test, method 3

4.3 Conditions to be specified

The conditions to be specified are the following:

a) method 1, 2 or 3;
b) method 1: dimensions of the test coil;
c) method 2: mounting grid pattern;
d) method 3:
   - number of current impulses and their frequency, if more than one impulse,
   - impulse shape;
e) any particular procedure, if the above is not applicable;
f) admissible limits of the operate and release/reset values.

5 Evaluation

The evaluation shall state that the products fulfil the requirements and the function is ensured.