



COMMITTEE DRAFT FOR VOTE (CDV)

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DATE OF CIRCULATION: 2023-07-07	CLOSING DATE FOR VOTING: 2023-09-29
SUPERSEDES DOCUMENTS: 94/790/CD, 94/874/CC	

IEC TC 94 : ELECTRICAL RELAYS	
SECRETARIAT: Austria	SECRETARY: Mr Bernhard Spalt
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 121, SC 121A	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	
<p>Attention IEC-CENELEC parallel voting</p> <p>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.</p> <p>https://standards.iteh.ai/catalog/standards/sist/1a34dd0d-238b-4a04-8847-1a34dd0d-238b-4a04-8847-pr-en-iec-61810-7-24-2023</p> <p>The CENELEC members are invited to vote through the CENELEC online voting system.</p>	

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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 7-24: Load transfer

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELEMENTARY RELAYS –
Tests and measurements**
Part 7-24: Load transfer**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
94/790/CD	94/874/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.

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

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

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

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- 70 • withdrawn,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

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ELEMENTARY RELAYS – Tests and measurements

Part 7-24: Load transfer

82 **1 Scope**

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

86 The object of this test is to check that a multipole relay is capable to transfer one source to
87 another.

88 **2 Normative references**

89 The following documents are referred to in the text in such a way that some or all of their content
90 constitutes requirements of this document. For dated references, only the edition cited applies.
91 For undated references, the latest edition of the referenced document (including any
92 amendments) applies.

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

95 IEC 61810-7-0: 202X, *All-or-nothing electrical relays – Tests and Measurements – Part 7-0:*
96 *Testing – General and Guidance*

97 IEC 61810-7-4: 202X, *All-or-nothing electrical relays – Tests and Measurements – Part 7-4:*
98 *Dielectric strength test*

99 IEC 61810-7-6: 202X, *All-or-nothing electrical relays – Tests and Measurements – Part 7-6:*
100 *Contact-circuit resistance (or voltage drop)*

101 IEC 61810-7-7: 202X, *All-or-nothing electrical relays – Tests and Measurements – Part 7-6:*
102 *Functional test*

103 **3 Terms and definitions**

104 For the purposes of this document, the terms and definitions given in Clause 3 of IEC 61810 7
105 0 apply.

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107 4 Load transfer

108 4.1 Purpose

109 To check that a relay with two or more changeover contacts is capable of changing over two
110 (or more) phase systems from one source to another.

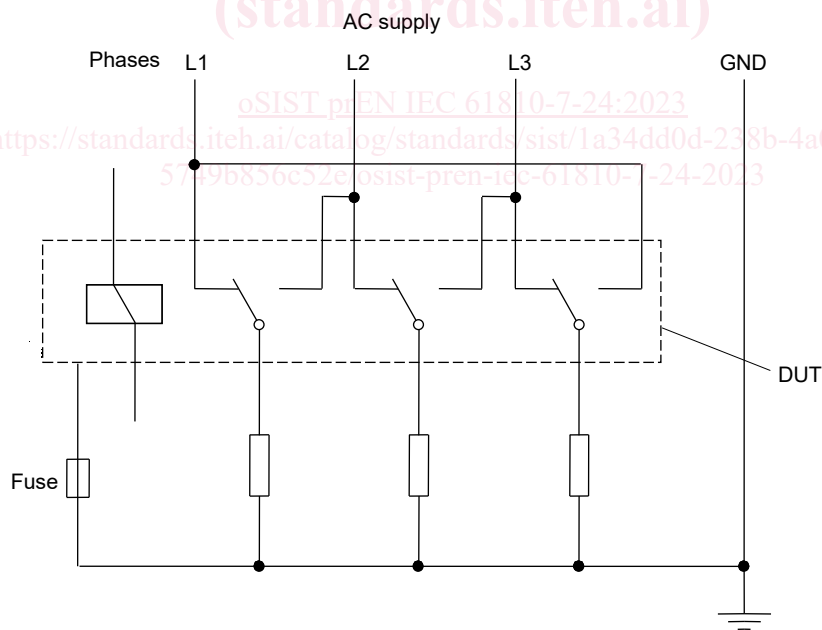
111 4.2 Procedure

112 The relay shall be connected to a suitable test circuit (an example for three-phase systems is
113 shown in Figure 1), the voltage, frequency and load being nominal values according to the
114 product specification. During the test, the relay mounting parts and any exposed conductive
115 parts shall be connected to the common point of the load, via a fuse rated at 5 % of the rated
116 load current, or 100 mA, whichever is the greater, unless otherwise specified.

117 The relay shall be energized as specified, operated at the frequency of operation and for the
118 number of cycles of 1000 cycles or as specified by the manufacturer. Continuous monitoring
119 shall be used to detect phase-to-phase arcing and contact malfunction. The fuse shall not blow
120 during the test.

121 Unless otherwise specified, the relay shall be (5 ± 1) s in the operate condition and (5 ± 1) s in
122 the release condition for each cycle.

123 In case of any deviation specified by the manufacturer in respect to voltage, frequency and load
124 this must be stated clearly in the test report.



IEC 289/06

125

126 **Figure 1 – Test circuit for load transfer**

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127 4.3 Conditions

128 The conditions to be specified are the following:

- 129 a) energization value;
- 130 b) voltage and frequency of the multi-phase system;
- 131 c) load parameters;
- 132 d) fuse rating;

- 133 e) frequency of operation, number of cycles, and times, if other than (5 ± 1) s;
134 f)
135 • dielectric test as specified,
136 • contact circuit resistance.

137 5 Evaluation

138 There shall be no contact malfunction be detected.

139 During the test shall be monitored:

- 140 • No phase-to-phase arcing and other abnormal sparking longer than a half period is allowed
141 to happen
142 • any contact malfunction – if not otherwise specified by the manufacturer.

143 The fuse shall not blow.

144 Following final measurements shall be performed:

- 145 • Functional test in accordance to IEC 61810-7-7, 202X;
146 • Dielectric strength test in accordance to IEC 61810-7-4, 202X;
147 • Contact-circuit resistance in accordance to IEC 61810-7-6, 202X

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Annex T (normative)

Test report

154 The Test report shall consist in addition to the general test report requirement given in Annex
155 T, IEC 61810-7-0 of the following:

- 156 • energization value;
- 157 • voltage and frequency of the multi-phase system;
- 158 • load parameters;
- 159 • fuse rating;
- 160 • frequency of operation, number of cycles, and times, if other than (5 ± 1) s;
- 161 • any breakdown and/or flash over (happen at which number of operations).
- 162 • if applicable – any other observation

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