SLOVENSKI STANDARD
oSIST prEN IEC 63522-0:2024

01-junij-2024

Električni releji - Preskusi in meritve - 0. del: Splošno in smernice

Electrical relays - Tests and Measurements - Part 0: General and Guidance

Ta slovenski standard je istoveten z: **prEN IEC 63522-0:2024**

ICS:

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94/990/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 63522-0 ED1**	
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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 0: General and Guidance

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 0: Testing - General and Guidance

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
94/963/CD	94/982/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.

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 "http://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 0: General and Guidance

1 Scope

This document includes a series of methods for testing along with their 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.

This part of IEC 63522 series specifies the general condition conditions to be applied for all testing if not otherwise specified and provide general guidance to be used in conjunction with all other IEC 63522 parts.

Table 1 – Table of all related standards

Part	Title
IEC 63522-0	General and Guidance
IEC 63522-1	Visual inspection and check of dimensions
IEC 63522-2	Mechanical tests and weighting
IEC 63522-3	Relay coil properties
IEC 63522-4	Dielectric strength test
IEC 63522-5	Insulation resistance
IEC 63522-6	Contact-circuit resistance (or voltage drop)
IEC 63522-7	Functional tests
IEC 63522-8	Timing Test
IEC 63522-9	Climatic tests
IEC 63522-10	Heating
IEC 63522-11	Enclosure Protection and Degree of Protection
IEC 63522-12	Internal moisture
IEC 63522-13	Corrosive atmospheres –Corrosive atmospheres due to sulfur impact
IEC 63522-14	Mould growth
IEC 63522-15	Robustness of terminals
IEC 63522-16	Soldering
IEC 63522-17	Shock, Acceleration and Vibration,
IEC 63522-18	Thermal resistance of the coil heating
IEC 63522-19	Electrical Endurance
IEC 63522-20	Mechanical Endurance
IEC 63522-21	Thermal Endurance
IEC 63522-22	Limiting continuous current

IEC 63522-24	Load transfer
IEC 63522-25	Magnetic interference
IEC 63522-26	Crosstalk and insertion loss
IEC 63522-27	Electrical contact noise
IEC 63522-28	Thermoelectric electromotive force (e.m.f.)
IEC 63522-29	Capacitance
IEC 63522-30	Contact sticking (delayed release)
IEC 63522-31	Magnetic remanence
IEC 63522-32	Acoustic noise
IEC 63522-33	Continuity of protective earth connection
IEC 63522-34	Fluid contamination
IEC 63522-35	Resistance to cleaning solvents
IEC 63522-36	Fire hazard
IEC 63522-37	Teminal temperature rise at rated load
IEC 63522-38	Mechanical interlock
IEC 63522-39	Insertion and withdrawal force
IEC 63522-40	Short circuit testing
IEC 63522-41	Insulation coordination
EC 63522-42	EMC
IEC 63522-43	Prof tracking index (PTI)
IEC 63522-44	Corrosive atmosphere - Salt mist
IEC 63522-45	Maximum frequency of operation
IEC 63522-46	Impulse voltage test
IEC 63522-48	Contact failure rate test
IEC 63522-49	Long term stability of sealing
IEC 63522-52	Coil overvoltage
IEC 63522-54	Critical DC load current
IEC 63522-55	Maximum DC load breaking capacity
IEC 63522-56	Ball Pressure Test

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 60028, *International standard of resistance for copper*

IEC 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-17, *Basic environmental testing procedures – Part 2-17: Tests – Test Q: Sealing*

IEC 60068-2-27, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-64:2008, *Environmental testing – Part 2-64: Tests – Test Fh: Vibration, broadband random and guidance*

IEC 60270, *High-voltage test techniques – Partial discharge measurements*

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60664-3:2016, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60721-3-3:2019, *Classification of environmental conditions – Part 3-3: Classification of groups of environmental parameters and their severities – Stationary use at weatherprotected locations*

IEC 60947-1:2020, *Low-voltage switchgear and controlgear – Part 1: General rules*

IEC 60999-1, *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 mm^2 up to 35 mm^2 (included)*

IEC 60999-2, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 2: Particular requirements for clamping units for conductors above 35 mm^2 up to 300 mm^2 (included)*

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

ISO 16750-1:2018, *Road vehicles – Environmental conditions and testing for electrical and electronic equipment – Part 1: General*

ISO 16750-2:2012, *Road vehicles – Environmental conditions and testing for electrical and electronic equipment – Part 2: Electrical loads*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply for the entire IEC 63522 series.

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

NOTE In the text of this document, the term "relay" is used instead of "elementary relay" to improve the readability.

3.1 Types of relays

3.1.1
electromechanical relay
electrical relay in which the intended response results mainly from the movement of mechanical elements

[IEV 444-01-04]

3.1.2
all-or-nothing relay
electrical relay, which is intended to be energized by a quantity, the value of which is either within its operative range or effectively zero

[IEV 444-01-02]

3.1.3
elementary relay
all-or-nothing relay which operates and releases without any intentional time delay

[IEV 444-01-03]

3.1.4
monostable relay
electrical relay which, having responded to an energizing quantity and having changed its condition, returns to its previous condition when that quantity is removed

[IEV 444-01-07]

3.1.5
bistable relay
electrical relay which, having responded to an energizing quantity and having changed its condition, remains in that condition after the quantity has been removed; a further appropriate energization is required to make it change its condition

[IEV 444-01-08]

3.1.6
polarized relay
electrical relay, the change of condition of which depends upon the polarity of its DC energizing quantity

[IEV 444-01-09]

3.1.7
non-polarized relay
electrical relay, the change of condition of which does not depend upon the polarity of its energizing quantity

[IEV 444-01-10]

3.2 Types of relays, based upon environmental protection (relay technology RT)

3.2.1
RT 0 unenclosed relay
relay not provided with a protective case

3.2.2
RT I dust protected relay
relay provided with a case which protects its mechanism from dust

3.2.3
RT II flux proof relay
relay capable of being automatically soldered without allowing the migration of solder fluxes beyond the intended areas

NOTE Where an enclosed construction is used, venting to the outside atmosphere is permissible.

3.2.4
RT III wash tight relay
relay capable of being automatically soldered and subsequently undergoing a washing process to remove flux residues without allowing the ingress of flux or washing solvents

NOTE In service, this type of relay is sometimes vented to the atmosphere after the soldering or washing process.

3.2.5
RT IV sealed relay
relay provided with a case which has no venting to the outside atmosphere, and having a time constant better than 2×10^4 s (see IEC 60068-2-17)

3.2.6
RT V hermetically sealed relay
sealed relay having an enhanced level of sealing, assuring a time constant better than 2×10^6 s (see IEC 60068-2-17)

3.3 Functions of a relay

3.3.1
release condition
for a monostable relay, specified condition of the relay when it is not energized; for a bistable relay, one of the conditions, as declared by the manufacturer

[IEV 444-02-01]

3.3.2
operate condition
for a monostable relay, specified condition of the relay when it is energized by the specified energizing quantity and has responded to that quantity; for a bistable relay, the condition other than the release condition as declared by the manufacturer

[IEV 444-02-02]

3.3.3
operate (verb)
set (for bistable relays only)
change from the release condition to the operate condition

[IEV 444-02-04]

3.3.4
release (verb)
for a monostable relay, change from the operate condition to the release condition

[IEV 444-02-05]

3.3.5
reset (verb)
for a bistable relay, change from the operate condition to the release condition

[IEV 444-02-06]