SLOVENSKI STANDARD

SIST EN 60255-22-5:2003

april 2003

Electrical relays - Part 22-5: Electrical disturbance tests for measuring relays and protection equipment - Surge immunity test

ICS 29.120.70

Referenčna številka
SIST EN 60255-22-5:2003(en)

EUROPEAN STANDARD **EN 60255-22-5**

NORME EUROPÉENNE

EUROPÄISCHE NORM June 2002

ICS 29.120.70

English version

Electrical relays
Part 22-5: Electrical disturbance tests for measuring relays and protection equipment - Surge immunity test
(IEC 60255-22-5:2002)

Relais électriques
Partie 22-5: Essais d'influence électrique concernant les relais de mesure et dispositifs de protection - Essai d'immunité aux ondes de choc
(CEI 60255-22-5:2002)

Elektrische Relais
Teil 22-5: Prüfung der elektrischen Störfestigkeit von Messrelais und Schutzeinrichtungen - Prüfung der Störfestigkeit gegen Stoßspannungen
(IEC 60255-22-5:2002)

This European Standard was approved by CENELEC on 2002-06-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC
European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 60255-22-5:2002 E

Foreword

The text of document 95/136/FDIS, future edition 1 of IEC 60255-22-5, prepared by IEC TC 95, Measuring relays and protection equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60255-22-5 on 2002-06-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2003-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-06-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60255-22-5:2002 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-161	- [1)]	International Electrotechnical Vocabulary (IEV) Chapter 161: Electromagnetic compatibility	-	-
IEC 60255-5	2000	Electrical relays Part 5: Insulation coordination for measuring relays and protection equipment - Requirements and tests	EN 60255-5	2001
IEC 60255-6 (mod)	1988	Part 6: Measuring relays and protection equipment	EN 60255-6 + corr. February	1994 1995
IEC 61000-4-5	1995	Electromagnetic compatibility (EMC) Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	1995

1) Undated reference.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60255-22-5

Première édition
First edition
2002-04

Relais électriques –

Partie 22-5:
Essais d'influence électrique concernant les relais de mesure et dispositifs de protection – Essais d'immunité aux ondes de choc

Electrical relays –

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International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE P

Pour prix, voir catalogue en vigueur
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL RELAYS –

Part 22-5: Electrical disturbance tests for measuring relays and protection equipment – Surge immunity test

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60255-22-5 has been prepared by technical committee 95: Measuring relays and protection equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting
95/136/FDIS	95/139/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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

ELECTRICAL RELAYS –

Part 22-5: Electrical disturbance tests for measuring relays and protection equipment – Surge immunity test

1 Scope and object

This standard is based on IEC 61000-4-5, referring to that publication where applicable, and specifies the general requirements for surge tests for measuring relays and protection equipment for power system protection, including the control, monitoring and process interface equipment used with those systems.

The objective of the tests is to confirm that the equipment under test will operate correctly when energized and subjected to high-energy disturbances on the power and interconnection lines, caused by surge voltages from switching and lightning effects.

This standard does not intend to test the capability of the insulation to withstand high-voltage stress. The insulation test is covered by IEC 60255-5.

The requirements specified in this standard are applicable to measuring relays and protection equipment in a new condition and all tests specified are type tests only.

The object of this standard is to define the:

- terms used;
- test severity levels;
- test equipment;
- test set-up;
- test procedures;
- criteria for acceptance;
- test report.

2 Normative references

The following referenced documents are indispensable for the application 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 60050(161), *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

IEC 60255-5:2000, *Electrical relays – Part 5: Insulation coordination for measuring relays and protection equipment – Requirements and tests*

IEC 60255-6:1988, *Electrical relays – Part 6: Measuring relays and protection equipment*

IEC 61000-4-5:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test*

3 Definitions

For the purpose of this part of IEC 60255, the following definitions apply.

3.1
auxiliary equipment
equipment necessary to provide the EUT with the signals required for normal operation and equipment to verify the performance of the EUT

3.2
communication port
interface with a communication and/or control system, using low energy signals, permanently connected to the apparatus

3.3
EUT
equipment under test, which may be either a measuring relay or protection equipment

3.4
input port
port through which the apparatus is energized or controlled in order to perform its function(s), for example current transformer, voltage transformer, binary (status), analogue inputs, etc.

3.5
interconnection lines
these consist of input/output lines, communication lines and balanced lines

3.6
output port
port through which the apparatus produces predetermined changes, for example contacts, optocoupler, analogue outputs, etc.

3.7
port
particular interface of the specified apparatus with the external electromagnetic environment (see figure 1)

3.8
power supply port
AC or DC auxiliary energizing input of the apparatus

3.9
transient
pertaining to or designating a phenomenon or a quantity which varies between two consecutive states during a time interval short compared to the time-scale of interest

[IEV 161-02-01]

3.10
surge
a transient wave of electrical current, voltage or power propagating along a line or a circuit and characterized by a rapid increase followed by a slower decrease

[IEV 161-08-11, modified]