SLOVENSKI STANDARD

SIST EN 62271-108:2006

december 2006

Visokonapetostne stikalne naprave – 108. del: Odklopniki za visokonapetostni izmenični tok za naznačene napetosti 72,5 kV in več (IEC 62271-108:2005)

High-voltage switchgear and controlgear – Part 108: High-voltage alternating current disconnecting circuit-breakers for rated voltages of 72,5 kV and above (IEC 62271-108:2005)

ICS 29.130.10

Referenčna številka
SIST EN 62271-108:2006(en)

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62271-108

March 2006

ICS 29.130.10

English version

High-voltage switchgear and controlgear
Part 108: High-voltage alternating current disconnecting circuit-breakers for rated voltages of 72,5 kV and above
(IEC 62271-108:2005)

Appareillage à haute tension
Partie 108: Disjoncteurs-sectionneurs
à courant alternatif à haute tension
de tensions assignées supérieures
ou égales à 72,5 kV
(CEI 62271-108:2005)

Hochspannungs-Schaltgeräte
und -Schaltanlagen
Teil 108: Hochspannungs-Wechselstrom-
Leistungsschalter mit Trennfunktion
für Bemessungsspannungen
größer oder gleich 72,5 kV
(IEC 62271-108:2005)

This European Standard was approved by CENELEC on 2005-12-01. 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, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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 62271-108:2006 E

Foreword

The text of document 17A/742/FDIS, future edition 1 of IEC 62271-108, prepared by SC 17A, High-voltage switchgear and controlgear, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62271-108 on 2005-12-01.

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)	2006-10-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2008-12-01

This European Standard should be read in conjunction with EN 62271-100:2001, EN 62271-102:2002 and EN 60694:1996, to which it refers and which is applicable, unless otherwise specified. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in EN 60694. Additional subclauses are numbered from 101.

This European Standard makes reference to International Standards. Where the International Standard referred to has been endorsed as a European Standard or a home-grown European Standard exists, this European Standard shall be applied instead. Pertinent information can be found on the CENELEC web site.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62271-108:2005 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(informative)

A-deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CENELEC member.

A-deviations in an EFTA-country are valid instead of the relevant provisions of the European Standard in that country until they have been removed.

Clause	Deviation
1.1	**Italy** (I.S.P.E.S.L.[1)] Rules, 95 revision: VSR.8.B.1; VSR.8.B.2; M.15.D.2) Italian laws apply to gas pressurized enclosures made of both insulating and metallic materials with a capacity of 25 litres or above, a design pressure higher than 0,05 kg/cm² and a temperature range: -25 °C/+100 °C (only for insulating materials). Moreover the manufacturer of any electrical equipment which comprehends gas pressurized enclosures must submit the design of the pressurized enclosures itself to a proper legal Authority indicating the stresses and the loads which have any influence on the design itself. For each of the stresses the manufacturer must indicate the design values and the relevant computations. – For metal-enclosed switchgear and controlgear containing gas-filled compartments, the design pressure is limited to a maximum of 0,5 bar (gauge) and the volume is limited to a maximum of 2 m^3. – Gas filled compartments having a design pressure exceeding 0,5 bar (gauge) or a volume exceeding 2 m^3 shall be designed according to Italian pressure vessel code for electrical switchgear (DM 1 December 1980 and DM 10 September 1981 published on Gazzetta Ufficiale n° 285 dated 16.10.1981).
5	**Italy** (I.S.P.E.S.L. [1)] Rules, 95 revision: VSR.8.B.1 and M.15.D.3. Tab I for porcelain) Only the use of porcelain type A or S. (Aluminous or Siliceous) is permitted.
6	**Italy** (I.S.P.E.S.L. [1)] Rules, 95 revision: VSR.8.B.1 Clause 2) The type test shall be performed in the presence of the Authority Supervisor. (I.S.P.E.S.L. [1)] Rules, 95 revision: VSR.8.B.2 Clause 2; M.15.D.4) An additional pressure test shall be performed on a complete pressurized enclosure. This has to withstand 1,5 times the design pressure without failure for five minutes. Temperature cycles test and electrical test shall be made; after these tests shall be carried out consecutively the pressure test at pressure p ≥ 4,25 times the design pressure.
7	**Italy** (I.S.P.E.S.L. [1)] Rules, 95 revision: VSR.8.B.1 subclause 4.1.2) For a homogeneous batch of 100 pieces max., one hollow insulator shall be subjected to the failure test with a pressure 4,25 times the design pressure.

[1)] I.S.P.E.S.L.: Istituto Superiore per la Prevenzione e la Sicurezza del Lavoro

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
62271-108

Première édition
First edition
2005-10

Appareillage à haute tension –

Partie 108: Disjoncteurs-sectionneurs à courant alternatif à haute tension de tensions assignées supérieures ou égales à 72,5 kV

High-voltage switchgear and controlgear –

Part 108: High-voltage alternating current disconnecting circuit-breakers for rated voltages of 72,5 kV and above

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE T

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 108: High-voltage alternating current disconnecting circuit-breakers for rated voltages of 72,5 kV and above

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 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 IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62271-108 has been prepared by subcommittee 17A, High-voltage switchgear and controlgear of IEC technical committee 17: Switchgear and controlgear.

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

FDIS	Report on voting
17A/742/FDIS	17A/749/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 2.

In Canada disconnecting circuit-breakers are accepted only when a visible gap is provided.

This standard should be read in conjunction with IEC 62271-100 (2001), IEC 62271-102 (2001) and IEC 60694, second edition, published in 1996, to which it refers and which is applicable, unless otherwise specified. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in IEC 60694. Amendments to these clauses and subclauses are given under the same numbering, whilst additional subclauses are numbered from 101.

The following standards belong to the same IEC 62271 series, under the general title *High-voltage switchgear and controlgear:*

Part 100: High-voltage alternating-current circuit-breakers

Part 101: Synthetic testing (to be published)

Part 102: Alternating current disconnectors and earthing switches

Part 104: Alternating current switches for rated voltages of 52 kV and above (in preparation)

Part 105: Alternating current switch-fuse combinations

Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV (to be published)

Part 108: High voltage alternating current disconnecting circuit-breakers for rated voltages of 72,5 kV and above

Part 109: Alternating-current series capacitor by-pass switches (to be published)

Part 110: Inductive load switching

The list of other parts of the IEC 62271 series can be found on the IEC website http://www.iec.ch. Further information is available at http://tc17.iec.ch.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 108: High-voltage alternating current disconnecting circuit-breakers for rated voltages of 72,5 kV and above

1 General

1.1 Scope and object

This part of IEC 62271 applies to high-voltage alternating current disconnecting circuit-breakers for operation at frequencies of 50 Hz and 60 Hz on systems having voltages of 72,5 kV and above.

This standard identifies which requirements of IEC 60694, IEC 62271-100 and IEC 62271-102 standards are applicable. It also gives the additional requirements specific to these devices.

This standard covers a circuit-breaker which, when in the open position, satisfies the requirements of both a circuit-breaker and a disconnector.

As there is interaction between the requirements of the separate functions it is necessary to consider the standardisation of requirements. This standard details the requirements for a disconnecting circuit-breaker, identifying where these differ from the separate requirements of a discrete circuit-breaker and a disconnector.

NOTE For design examples of disconnecting circuit-breakers, refer to Annex A.

1.2 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 60694:1996, *Common specifications for high-voltage switchgear and controlgear standards*

IEC 62271-100:2001, *High-voltage switchgear and controlgear – Part 100: High-voltage alternating-current circuit-breakers*

IEC 62271-102:2001, *High-voltage switchgear and controlgear – Part 102: Alternating-current disconnectors and earthing switches*

IEC 62271-310:2004, *High-voltage switchgear and controlgear – Part 310: Electrical endurance testing for circuit-breakers of rated voltage 72,5 kV and above*

2 Normal and special service conditions

Clause 2 of IEC 60694 is applicable.