SLOVENSKI STANDARD
SIST EN 62271-109:2009/A1:2013

01-oktober-2013

Visokonapetostne stikalne in krmilne naprave - 109. del: Stikala z zaporednimi kondenzatorji na izmenični tok (IEC 62271-109:2008/A1:2013)

High-voltage switchgear and controlgear - Part 109: Alternating-current series capacitor by-pass switches (IEC 62271-109:2008/A1:2013)

Hochspannungs-Schaltgeräte und -Schaltanlagen - Teil 109: Wechselstrom-Überbrückungsschalter für Reihenkondensatoren (IEC 62271-109:2008/A1:2013)

Appareillage à haute tension - Partie 109: Interrupteurs de contournement pour condensateurs série à courant alternatif (CEI 62271-109:2008/A1:2013)

Ta slovenski standard je istoveten z: **EN 62271-109:2009/A1:2013**

ICS:

29.130.10	Visokonapetostne stikalne in krmilne naprave	High voltage switchgear and controlgear

SIST EN 62271-109:2009/A1:2013 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62271-109/A1

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English version

High-voltage switchgear and controlgear - Part 109: Alternating-current series capacitor by-pass switches
(IEC 62271-109:2008/A1:2013)

Appareillage à haute tension -
Partie 109: Interrupteurs de contournement pour condensateurs série à courant alternatif
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(IEC 62271-109:2008/A1:2013)

This amendment A1 modifies the European Standard EN 62271-109:2009; it was approved by CENELEC on 2013-07-02. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 CEN-CENELEC Management Centre or to any CENELEC member.

This amendment 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 CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

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Foreword

The text of document 17A/1038/FDIS, future IEC 62271-109:2008/A1, 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 approved by CENELEC as EN 62271-109:2009/A1:2013.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2014-04-02
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-07-02

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62271-109:2008/A1:2013 was approved by CENELEC as a European Standard without any modification.

Annex ZB
(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 national member.

This European Standard does not fall under any Directive of the EU.

In the relevant CENELEC countries these A-deviations are valid instead of the provisions of the European Standard until they have been removed.

Clause	Deviation
1.1	**Italy** (I.S.P.E.S.L. (*) Rules, 95 revision: VSR.8.B.1; VSR.8.B.2; M.15.D.2 to .4.) For high-voltage alternating current circuit-breakers 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 (DM1 December 1980 and DM 10 September 1981 published on Gazzetta Ufficiale n°285 dated 16.10.1981). This requirement is not applicable for gas filled compartments having a design pressure exceeding 0,5 bar (gauge) but a volume not exceeding 25 dm^3. Italian laws apply to gas pressurised enclosures made of both insulating and metallic materials with a capacity of 25 litres or above, a design pressure higher than 0,05 kg/cm^2 and a temperature range: -25 °C/+100 °C (only for insulating materials). Moreover, the manufacturer of any electrical equipment which comprehends gas pressurised enclosures shall submit the design of the pressurised 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 shall indicate the design values and the relevant computations. Only the use of porcelain type A or S (Aluminous or Siliceous) is permitted. (*) I.S.P.E.S.L.: Istituto Superiore per la Prevenzione e la Sicurezza del Lavoro.

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

**High-voltage switchgear and controlgear –
Part 109: Alternating-current series capacitor by-pass switches**

**Appareillage à haute tension –
Partie 109: Interrupteurs de contournement pour condensateurs série à courant alternatif**

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FOREWORD

This amendment has been prepared by subcommittee 17A: High-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

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

FDIS	Report on voting
17A/1038/FDIS	17A/1043/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability 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.

3.7.106
peak value of transient by-pass current

Replace the existing term, definition and notes as follows:

by-pass making current
peak value of the by-pass current in a pole of a by-pass switch during the transient period following the initiation of current during a by-passing operation. This value is the maximum instantaneous value of the sum of the capacitor bank discharge current component and the power-frequency current component. In case of system faults, the power-frequency fault current is equal to the maximum varistor coordinating current or for schemes without varistor, the actual maximum power-frequency fault current at the particular location

NOTE 1 The peak value may differ from one pole to another and from one operation to another as it depends on the instantaneous capacitor voltage prior to by-passing.

NOTE 2 Where, for a three-phase circuit, a single value of peak value of by-pass making current is referred to, this is, unless otherwise stated, the highest value in any phase.

NOTE 3 The maximum power-frequency fault current at a particular location or the maximum varistor coordinating current is generally much lower than the rated peak withstand current of by-pass switch.

3.9 Index of definitions

*Add, under "*B*", the following new line:*

By-pass making current 3.7.106

*Delete, under "*P*", the existing line "*peak value of the transient by-pass current*".*

4.101 Rated operating sequence

Replace the existing Notes 1, 2 and 3 of this subclause by the following new text and notes:

where

C represents a closing operation;

OC represents an opening operation followed immediately (that is, without any intentional delay) by a closing operation;

t and t' are time intervals between successive operations;

t and t' should always be expressed in minutes or in seconds.

If the by-passing-insertion time is adjustable, the limits of adjustment should be specified.

NOTE 1 Instead of t = 0,3 s, other value: t = 0,2 s is also used for by-pass switches intended for rapid auto-reopening.

NOTE 2 Instead of t' = 3 min., other values: t' = 15 s and t' = 1 min are also used for by-pass switches intended for rapid auto-reopening.

NOTE 3 Other operating sequences may be specified depending upon system requirements.

4.102 Rated by-pass making current (I_{BP})

Replace the existing first paragraph of this subclause by the following new paragraph:

The rated by-pass making current is the maximum value of the by-pass making current that the by-pass switch shall be capable of making under line fault condition when the capacitor bank is pre-charged to the limiting voltage of the overvoltage protector (U_{PL}) and with a frequency of the by-pass discharge current corresponding to the actual capacitance of the capacitor bank with its associated inductance of the damping circuit. The effective damping of the by-pass discharge current can be taken into consideration.

Replace the existing note of this subclause by the following new note:

NOTE The rated by-pass making current should be determined by system studies as the maximum sum of the instantaneous capacitor bank discharge current and the instantaneous fault current component during the pre-arcing period (see also IEC 60143-2). A value of pre-arcing time of 5 ms is suggested in case no data is available.

Replace the existing third paragraph of this subclause by the following new paragraph:

The by-pass making performance is covered when the required peak value of the by-pass making current is equal to or lower than the peak current value used in the relevant type test. This rule is considered to be valid only when the frequency f_{BP} of the by-pass making current is equal to or lower than 130 % of the corresponding value used during type tests.

6.104.5 Number of making operations

Replace the existing text of the subclause, including the note, by the following new text and table:

The by-pass making current test can be performed using one of the two alternatives given in Table 7.

The by-pass switch conditions shall be in accordance with 6.102.3.1.