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Standards

Irish Standard  
I.S. EN 60549:2013

# High-voltage fuses for the external protection of shunt capacitors (IEC 60549:2013 (EQV))

## I.S. EN 60549:2013

*Incorporating amendments/corrigenda issued since publication:*

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**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN 60549**

June 2013

ICS 29.120.50

English version

**High-voltage fuses for the external protection of shunt capacitors**  
**(IEC 60549:2013)**

Coupe-circuit à fusibles haute tension  
destinés à la protection externe des  
condensateurs shunt  
(CEI 60549:2013)

Hochspannungssicherungen für den  
externen Schutz von  
Parallelkondensatoren  
(IEC 60549:2013)

This European Standard was approved by CENELEC on 2013-05-28. 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.

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## **Foreword**

The text of document 32A/294/CDV, future edition 2 of IEC 60549, prepared by SC 32A, "High voltage fuses", of IEC/TC 32, "Fuses" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60549:2013.

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) 2014-02-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-05-28

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## **Endorsement notice**

The text of the International Standard IEC 60549:2013 was approved by CENELEC as a European Standard without any modification.

## **Annex ZA**

(normative)

### **Normative references to international publications with their corresponding European publications**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60282-1	2009	High-voltage fuses - Part 1: Current-limiting fuses	EN 60282-1	2009
IEC 60282-2	-	High-voltage fuses - Part 2: Expulsion fuses	-	-
IEC 60871-1	-	Shunt capacitors for a.c. power systems having a rated voltage above 1 000 V - Part 1: General	EN 60871-1	-

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### **HIGH-VOLTAGE FUSES FOR THE EXTERNAL PROTECTION OF SHUNT CAPACITORS**

#### FOREWORD

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International Standard IEC 60549 has been prepared by subcommittee 32A: High voltage fuses, of IEC technical committee 32: Fuses.

This second edition cancels and replaces the first edition published in 1976. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) alignment of the document with current IEC document structure requirements;
- b) clarification of certain test requirements.



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

CDV	Report on voting
32A/294/CDV	32A/298/RVC

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.

The committee has decided that the contents of this 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.

## HIGH-VOLTAGE FUSES FOR THE EXTERNAL PROTECTION OF SHUNT CAPACITORS

### 1 Scope

This standard applies to external fuses used with high-voltage capacitors according to IEC 60871-1, Shunt capacitors for a.c. power systems having a rated voltage above 1 000 V – Part 1: General. IEC 60871-1 is applicable to both capacitor units and capacitor banks intended to be used, particularly, for power-factor correction of a.c. power systems, and also to capacitors intended for use in power filter circuits.

Fuses according to this standard are intended to clear either faults inside a capacitor unit to permit continued operation of the remaining parts of the bank in which the unit is connected (unit fuses) or faults on the whole capacitor bank to isolate the bank from the system (line fuses).

In this standard the terms “capacitive current” and “inductive current” are used to indicate test currents that have a leading or lagging power factor, respectively, and in which the circuit contains predominantly capacitive or inductive components. The word “capacitor” is used when it is not necessary to lay particular stress upon the different meanings of the word “capacitor unit” or “capacitor bank”.

In some cases, fuses tested only to IEC 60282-1 or IEC 60282-2 may be suitable for use with capacitors if they are not required to interrupt capacitive currents (e.g. if capacitive currents cannot flow, or if they are acting as a “back-up”, to provide high inductive current breaking, to other devices that will clear capacitive currents).

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60282-1:2009, *High-voltage fuses – Part 1: Current-limiting fuses*

IEC 60282-2, *High-voltage Fuses – Part 2: Expulsion Fuses*

IEC 60871-1, *Shunt capacitors for ac power systems having a rated voltage above 1 000 V – Part 1: General*

### 3 Terms and definitions

For the purposes of this document, the following definitions apply.

#### 3.1

##### **(capacitor) element**

a device consisting essentially of two electrodes separated by a dielectric

[SOURCE: IEC 60050-436:1990, 436-01-03]

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