

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Series capacitors for power systems –  
Part 3: Internal fuses**

**Condensateurs série destinés à être installés sur des réseaux –  
Partie 3: Fusibles internes**





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ELECTROTECHNICAL  
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**SERIES CAPACITORS FOR POWER SYSTEMS –****Part 3: Internal fuses****FOREWORD**

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International Standard IEC 60143-3 has been prepared by IEC technical committee 33: Power capacitors and their applications.

This second edition cancels and replaces the first edition published in 1998. This edition constitutes a technical revision.

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

The test procedure has been largely simplified.

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

FDIS	Report on voting
33/577/FDIS	33/579/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.

A list of all parts in the IEC 60143 series, published under the general title *Series capacitors for power systems*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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- withdrawn,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.

# SERIES CAPACITORS FOR POWER SYSTEMS –

## Part 3: Internal fuses

### 1 Scope

This part of IEC 60143 applies to internal fuses designed to isolate faulty capacitor elements, to allow operation of the remaining parts of that capacitor unit and the bank in which the capacitor unit is connected. Such fuses are not a substitute for a switching device such as a circuit-breaker, or for external protection of the capacitor bank, or any part thereof.

The object of this part of IEC 60143 is:

- to formulate requirements regarding performance and testing;
- to provide a guide for coordination of fuse and bank protection.

NOTE External fuses for series capacitors are treated in IEC 60143-1:2004, Annex A: "Test requirements and application guide for external fuses and units to be externally fused".

### 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 60143-1:2004, *Series capacitors for power systems – Part 1: General*

IEC 60143-2:2012, *Series capacitors for power systems – Part 2: Protective equipment for series capacitor banks*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions contained in IEC 60143-1 and IEC 60143-2, as well as the following, apply.

#### 3.1

**rated voltage of a capacitor element  $U_{Ne}$**

r.m.s. value of the alternating voltage for which the capacitor element has been designed

### 4 Performance requirements

#### 4.1 General

The fuse is connected in series with the element(s) which the fuse is intended to isolate if the element(s) becomes faulty. The range of currents and voltages for the fuse is therefore dependent on the capacitor design, and in some cases also on the design of the bank in which the fuse is connected.

The operation of an internal fuse is in general determined by one or both of the two following factors: