# Shunt capacitors for a.c. power systems having a rated voltage above 1 000 V - Part 1: General

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| | |
|---|---|
| See Eesti standard EVS-EN 60871-1:2014 sisaldab Euroopa standardi EN 60871-1:2014 ingliskeelset teksti. | This Estonian standard EVS-EN 60871-1:2014 consists of the English text of the European standard EN 60871-1:2014. |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.08.2014. | Date of Availability of the European standard is 08.08.2014. |
| Standard on kättesaadav Eesti Standardikeskusest. | The standard is available from the Estonian Centre for Standardisation. |

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ICS 29.240.99, 31.060.70

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 60871-1

August 2014

ICS 31.060.70; 29.240.99

Supersedes EN 60871-1:2005

English Version

# Shunt capacitors for a.c. power systems having a rated voltage above 1 000 V - Part 1: General (IEC 60871-1:2014)

Condensateurs shunt pour réseaux à courant alternatif de tension assignée supérieure à 1 000 V - Partie 1: Généralités (CEI 60871-1:2014)

Parallelkondensatoren für Wechselspannungs-Starkstromanlagen mit einer Nennspannung über 1 kV - Teil 1: Allgemeines (IEC 60871-1:2014)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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Ref. No. EN 60871-1:2014 E

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## Foreword

The text of document 33/559/FDIS, future edition 4 of IEC 60871-1, prepared by IEC/TC 33 "Power capacitors and their applications" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60871-1:2014.

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) | 2015-03-26 |
| • latest date by which the national standards conflicting with the document have to be withdrawn | (dow) | 2017-06-26 |

This document supersedes EN 60871-1:2005.

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 60871-1:2014 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

| | | |
|---|---|---|
| IEC 60038:2009 | NOTE | Harmonized as EN 60038:2011 (modified). |
| IEC 60071-2:1996 | NOTE | Harmonized as EN 60071-2:1997 (not modified). |
| IEC 60099 Series | NOTE | Harmonized as EN 60099 Series (partly modified). |
| IEC 60110-1 | NOTE | Harmonized as EN 60110-1. |
| IEC 60143 Series | NOTE | Harmonized as EN 60143 Series (not modified). |
| IEC 60252 Series | NOTE | Harmonized as EN 60252 Series (not modified). |
| IEC 60358 Series | NOTE | Harmonized as EN 60358 Series (not modified). |
| IEC 60831 Series | NOTE | Harmonized as EN 60831 Series (not modified). |
| IEC 60931 Series | NOTE | Harmonized as EN 60931 Series (not modified). |
| IEC 61048 | NOTE | Harmonized as EN 61048. |
| IEC 61049 | NOTE | Harmonized as EN 61049. |
| IEC 61071 | NOTE | Harmonized as EN 61071. |
| IEC 61270-1 | NOTE | Harmonized as EN 61270-1. |
| IEC 61642 | NOTE | Harmonized as EN 61642. |

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# 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 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60060-1 | - | High-voltage test techniques - Part 1: General definitions and test requirements | EN 60060-1 | - |
| IEC 60071-1 | 2006 | Insulation co-ordination - Part 1: Definitions, principles and rules | EN 60071-1 | 2006 |
| IEC 60549 | - | High-voltage fuses for the external protection of shunt capacitors | EN 60549 | - |
| IEC/TS 60815 | series | Selection and dimensioning of high-voltage insulators intended for use in polluted conditions | - | |
| IEC 60871-4 | 1996 | Shunt capacitors for a.c. power systems having a rated voltage above 1000 V - Part 4: Internal fuses | EN 60871-4 | 1996 [1)] |

1) EN 60871-4:1996 is superseded by EN 60871-4:2014, which is based on IEC 60871-4:2014.

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# SHUNT CAPACITORS FOR AC POWER SYSTEMS HAVING A RATED VOLTAGE ABOVE 1 000 V –

## Part 1: General

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## 1 Scope

This part of IEC 60871 is applicable to both capacitor units and capacitor banks intended to be used, particularly, for power-factor correction of a.c. power systems having a rated voltage above 1 000 V and frequencies of 15 Hz to 60 Hz.

This part of IEC 60871 also applies to capacitors intended for use in power filter circuits. Additional definitions, requirements and tests for filter capacitors are given in Annex B.

Additional requirements for capacitors protected by internal fuses as well as requirements for the internal fuses are given in IEC 60871-4.

Requirements for capacitors to be protected by external fuses, as well as requirements for the same, are given in Annex C.

This standard does not apply to capacitors of the self-healing metallized dielectric type.

The following capacitors are excluded from this part of IEC 60871:

– capacitors for inductive heat-generating plants operating at frequencies between 40 Hz and 24 000 Hz (IEC 60110-1);
– series capacitors for power systems (see the IEC 60143 series);
– capacitors for motor applications and the like (see the IEC 60252 series);
– coupling capacitors and capacitor dividers (IEC 60358);
– shunt capacitors for a.c. power systems having rated voltage up to and including 1 000 V (see the IEC 60831 and IEC 60931 series);
– small a.c. capacitors to be used for fluorescent and discharge lamps (IEC 61048 and IEC 61049);
– capacitors to be used in power electronic circuits (IEC 61071);
– capacitors for microwave ovens (IEC 61270-1);
– capacitors for suppression of radio interference;
– capacitors intended for use with a.c. voltage superimposed on d.c. voltage.

Accessories such as insulators, switches, instrument transformers, external fuses, etc. are in accordance with the relevant IEC standards.

The object of this part of IEC 60871 is as follows:

a) to formulate uniform rules regarding the performance and rating of units and banks, and the testing of units;
b) to formulate specific safety rules;
c) to provide a guide for installation and operation.