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## COMMENTED VERSION

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### **Kopplingsapparater för spänning över 1 kV – Del 214: Ljusbågsklassificering av stolpmonterade, metallkapslade kopplingsutrustningar med märkspänning över 1 kV och högst 52 kV**

*High-voltage switchgear and controlgear –*

*Part 214: Internal arc classification for metal enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

En så kallad ”Commented Version” (CMV) innehåller både den fastställda IEC-standarderna och en kommenterad och ändringsmarkerad standard. Alla tillägg och borttagningar sedan den tidigare utgåvan är markerade med färg. Med en CMV sparar du mycket tid när du ska identifiera och förklara aktuella ändringar i standarderna. SEK Svensk Elstandard kan bara ge ut CMV i de fall den finns tillgänglig från IEC.



IEC 62271-214

Edition 2.0 2024-04  
COMMENTED VERSION

# INTERNATIONAL STANDARD



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**High-voltage switchgear and controlgear –  
Part 214: Internal arc classification for AC metal-enclosed pole-mounted  
switchgear and controlgear for rated voltages above 1 kV and up to and  
including 52 kV**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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ICS 29.130.10

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

#### Part 214: Internal arc classification for AC metal-enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV

#### 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.
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- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

**This commented version (CMV) of the official standard IEC 62271-214:2024 edition 2.0 allows the user to identify the changes made to the previous IEC 62271-214:2019 edition 1.0. Furthermore, comments from IEC TC SC 17C experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.**

**A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.**

**This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.**

IEC 62271-214 has been prepared by subcommittee 17C: Assemblies, of IEC technical committee 17: High voltage switchgear and controlgear. It is an International Standard.

This second edition cancels and replaces the first edition published in 2019. This edition constitutes a technical revision.

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

- a) indicators positioning update;
- b) neutral earthing connection of the test circuit for three-phase tests;
- c) general review for consistency with IEC 62271-200, Ed.3.0:2021.

The text of this International Standard is based on the following documents:

| Draft        | Report on voting |
|--------------|------------------|
| 17C/924/FDIS | 17C/931/RVD      |

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

This standard shall be read in conjunction with IEC 62271-1, second edition, published in 2017, to which it refers, and which is applicable unless otherwise specified in this standard. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in IEC 62271-1. Amendments to these clauses and subclauses are given under the same references whilst additional subclauses are numbered from 101. Any clause with the term "Not applicable" relates to the clause not being relevant to IEC 62271-214, and does not infer the clause is or is not relevant for its applicable switchgear standard.

A list of all parts of the IEC 62271 series, published under the general title *High-voltage switchgear and controlgear*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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## INTRODUCTION

IEC 62271-214 has been developed due to the requirement to remove IAC Type C designated pole-mounted switchgear from IEC 62271-200. ~~Only enclosed terminal equipment is to be considered within IEC 62271-200. For this reason,~~ IEC 62271-214 is to be considered independent of IEC 62271-200, however it is still related to other product standards of the IEC 62271 series.

Only open terminal pole-mounted switchgear and controlgear has been considered within this document.

This equipment relates to operation in three-phase, two-phase and single-phase systems.

## HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

### Part 214: Internal arc classification for

### AC 1 metal-enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV

## 1 Scope

This part of IEC 62271 specifies requirements for internal arc classification of AC metal-enclosed pole-mounted switchgear ~~installations used for alternating current~~ and controlgear with rated voltages above 1 kV and up to and including 52 kV with service frequencies up to and including 60 Hz.

This document is applicable to three-phase, two-phase and single-phase open terminal equipment for which an internal arc classification is assigned 2. Enclosures may include fixed and removable components and may be filled with fluid (liquid or gas) to provide insulation.

NOTE 1 The IAC classification takes into account the installation disposition of the high-voltage switchgear and controlgear and worker's operating area. 3

NOTE 2 For the use of this document, high-voltage (IEC 60050-601:1985, 601-01-27) is the rated voltage above 1 000 V. However, medium voltage (IEC 60050-601:1985, 601-01-28) is commonly used for distribution systems with voltages above 1 kV and generally applied up to and including 52 kV; refer to [1]<sup>1</sup>.

This document does not preclude that other equipment may be included in the same enclosure. In such a case, any possible influence of that equipment on the switchgear and controlgear is to be taken into account.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60050-151:2001, *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*

IEC 60050-151:2001/AMD1:2013

IEC 60050-151:2001/AMD2:2014

IEC 60050-151:2001/AMD3:2019

IEC 60050-151:2001/AMD4:2020

IEC 60050-151:2001/AMD5:2021

IEC 60050-441:1984, *International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses*

IEC 60050-441:1984/AMD1:2000

IEC 62271-1:2017, *High-voltage switchgear and controlgear – Part 1: Common specifications for alternating current switchgear and controlgear*

IEC 62271-1:2017/AMD1:2021

<sup>1</sup> Numbers in square brackets refer to the Bibliography.

IEC 62271-200:2021, *High-voltage switchgear and controlgear – Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

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## Kopplingsapparater för spänning över 1 kV – Del 214: Ljusbågsklassificering av stolpmonterade, metallkapslade kopplingsutrustningar med märkspänning över 1 kV och högst 52 kV

*High-voltage switchgear and controlgear –*

*Part 214: Internal arc classification for metal enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

Som svensk standard gäller europastandarden EN IEC 62271-214:2024. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62271-214:2024.

### Nationellt förord

Europastandarden EN IEC 62271-214:2024

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 62271-214, Second edition, 2024 - High-voltage switchgear and controlgear – Part 214: Internal arc classification for metal enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 62271-1, utg 2:2018.

Tidigare fastställd svensk standard SS-EN IEC 62271-214, utg 1:2020 med eventuella tillägg, ändringar och rättelser gäller ej fr o m 2027-05-21.

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Denna standard är fastställd av SEK Svensk Elstandard, som också kan lämna upplysningar om **sakinnehållet** i standarden.  
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## Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

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Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

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SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

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Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

## Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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English Version

High-voltage switchgear and controlgear - Part 214: Internal arc classification for AC metal-enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV  
(IEC 62271-214:2024)

Appareillage à haute tension - Partie 214 : Classification arc interne des appareillages sous enveloppe métallique à courant alternatif de tensions assignées supérieures à 1 kV et inférieures ou égales à 52 kV montées sur poteau  
(IEC 62271-214:2024)

Hochspannungs-Schaltgeräte und -Schaltanlagen - Teil 214: Störlichtbogenklassifikation für metallgekapselte, mastmontierte Schaltanlagen für Bemessungsspannungen über 1 kV bis einschließlich 52 kV  
(IEC 62271-214:2024)

This European Standard was approved by CENELEC on 2024-05-21. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.



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## **European foreword**

The text of document 17C/924/FDIS, future edition 2 of IEC 62271-214, prepared by SC 17C "Assemblies" of IEC/TC 17 "High-voltage switchgear and controlgear" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62271-214:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2025-02-21 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-05-21 document have to be withdrawn

This document supersedes EN IEC 62271-214:2019 and all of its amendments and corrigenda (if any).

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

## **Endorsement notice**

The text of the International Standard IEC 62271-214:2024 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 standard indicated:

|                        |      |  |
|------------------------|------|--|
| IEC 62271-200:2021     | NOTE | Approved as EN IEC 62271-200:2021 (not modified)     |
| IEC/TR 62271-307:2015  | NOTE | Approved as CLC IEC/TR 62271-307:2019 (not modified) |
| IEC 60038:2009         | NOTE | Approved as EN 60038:2011                            |
| IEC 60059:1999         | NOTE | Approved as EN 60059:1999 (not modified)             |
| IEC 60059:1999/A1:2009 | NOTE | Approved as EN 60059:1999/A1:2009 (not modified)     |

## Annex ZA (normative)

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

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where 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.cencenelec.eu](http://www.cencenelec.eu).

| <u>Publication</u> | <u>Year</u> | <u>Title</u>   | <u>EN/HD</u>     | <u>Year</u> |
|--------------------|-------------|--|------------------|-------------|
| IEC 60050-151      | 2001        | International Electrotechnical Vocabulary - Part 151: Electrical and magnetic devices  | -                | -           |
| + AMD1             | 2013        |  | -                | -           |
| + AMD2             | 2014        |  | -                | -           |
| + AMD3             | 2019        |  | -                | -           |
| + AMD4             | 2020        |  | -                | -           |
| + AMD5             | 2021        |  | -                | -           |
| IEC 60050-441      | 1984        | International Electrotechnical Vocabulary. Switchgear, controlgear and fuses   | -                | -           |
| +AMD1              | 2000        |  |                  |             |
| IEC 62271-1        | 2017        | High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear                                   | EN 62271-1       | 2017        |
| + AMD1             | 2021        |  | + A1             | 2021        |
| IEC 62271-200      | 2021        | High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV | EN IEC 62271-200 | 2021        |

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



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**High-voltage switchgear and controlgear –  
Part 214: Internal arc classification for AC metal-enclosed pole-mounted  
switchgear and controlgear for rated voltages above 1 kV and up to and  
including 52 kV**

**Appareillage à haute tension –  
Partie 214 : Classification arc interne des appareillages sous enveloppe  
métallique à courant alternatif de tensions assignées supérieures à 1 kV et  
inférieures ou égales à 52 kV montées sur poteau**

INTERNATIONAL  
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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

### **Part 214: Internal arc classification for AC metal-enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV**

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IEC 62271-214 has been prepared by subcommittee 17C: Assemblies, of IEC technical committee 17: High voltage switchgear and controlgear. It is an International Standard.

This second edition cancels and replaces the first edition published in 2019. This edition constitutes a technical revision.

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

- a) indicators positioning update;
- b) neutral earthing connection of the test circuit for three-phase tests;
- c) general review for consistency with IEC 62271-200, Ed.3.0:2021.

The text of this International Standard is based on the following documents:

| Draft        | Report on voting |
|--------------|------------------|
| 17C/924/FDIS | 17C/931/RVD      |

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

This standard shall be read in conjunction with IEC 62271-1, second edition, published in 2017, to which it refers, and which is applicable unless otherwise specified in this standard. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in IEC 62271-1. Amendments to these clauses and subclauses are given under the same references whilst additional subclauses are numbered from 101. Any clause with the term "Not applicable" relates to the clause not being relevant to IEC 62271-214, and does not infer the clause is or is not relevant for its applicable switchgear standard.

A list of all parts of the IEC 62271 series, published under the general title *High-voltage switchgear and controlgear*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

## INTRODUCTION

IEC 62271-214 has been developed due to the requirement to remove IAC Type C designated pole-mounted switchgear from IEC 62271-200. IEC 62271-214 is to be considered independent of IEC 62271-200, however it is still related to other product standards of the IEC 62271 series.

Only open terminal pole-mounted switchgear and controlgear has been considered within this document.

This equipment relates to operation in three-phase, two-phase and single-phase systems.

## HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

### Part 214: Internal arc classification for AC metal-enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV

#### 1 Scope

This part of IEC 62271 specifies requirements for internal arc classification of AC metal-enclosed pole-mounted switchgear and controlgear with rated voltages above 1 kV and up to and including 52 kV with service frequencies up to and including 60 Hz.

This document is applicable to three-phase, two-phase and single-phase open terminal equipment for which an internal arc classification is assigned. Enclosures may include fixed and removable components and may be filled with fluid (liquid or gas) to provide insulation.

NOTE 1 The IAC classification takes into account the installation disposition of the high-voltage switchgear and controlgear and worker's operating area.

NOTE 2 For the use of this document, high-voltage (IEC 60050-601:1985, 601-01-27) is the rated voltage above 1 000 V. However, medium voltage (IEC 60050-601:1985, 601-01-28) is commonly used for distribution systems with voltages above 1 kV and generally applied up to and including 52 kV; refer to [1]<sup>1</sup>.

This document does not preclude that other equipment may be included in the same enclosure. In such a case, any possible influence of that equipment on the switchgear and controlgear is to be taken into account.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60050-151:2001, *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*

IEC 60050-151:2001/AMD1:2013

IEC 60050-151:2001/AMD2:2014

IEC 60050-151:2001/AMD3:2019

IEC 60050-151:2001/AMD4:2020

IEC 60050-151:2001/AMD5:2021

IEC 60050-441:1984, *International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses*

IEC 60050-441:1984/AMD1:2000

IEC 62271-1:2017, *High-voltage switchgear and controlgear – Part 1: Common specifications for alternating current switchgear and controlgear*

IEC 62271-1:2017/AMD1:2021

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<sup>1</sup> Numbers in square brackets refer to the Bibliography.

IEC 62271-200:2021, *High-voltage switchgear and controlgear – Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*