

BS EN 60099-4:2014



BSI Standards Publication

## Surge arresters

Part 4: Metal-oxide surge arresters  
without gaps for a.c. systems

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### **National foreword**

This British Standard is the UK implementation of EN 60099-4:2014. It is identical to IEC 60099-4:2014. It supersedes BS EN 60099-4:2004+A2:2009 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/37, Surge Arresters - High Voltage.

A list of organizations represented on this committee can be obtained on request to its secretary.

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(IEC 60099-4:2014)**

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Überspannungsableiter - Teil 4: Metalloxidableiter ohne  
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(IEC 60099-4:2014)

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

## Foreword

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This document supersedes EN 60099-4:2004.

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## Endorsement notice

The text of the International Standard IEC 60099-4:2014 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 60068-2-17     | NOTE | Harmonized as EN 60068-2-17.                    |
| IEC 60099-1        | NOTE | Harmonized as EN 60099-1.                       |
| IEC 60099-5:2013   | NOTE | Harmonized as EN 60099-5:2013 (not modified).   |
| IEC 60721-3-2      | NOTE | Harmonized as EN 60721-3-2.                     |
| IEC 62271-202:2006 | NOTE | Harmonized as EN 62271-202:2007 (not modified). |
| ISO 3274           | NOTE | Harmonized as EN ISO 3274.                      |

## 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](http://www.cenelec.eu).

| <u>Publication</u> | <u>Year</u> | <u>Title</u>  | <u>EN/HD</u>  | <u>Year</u> |
|--------------------|-------------|---|---------------|-------------|
| IEC 60060-1        | -           | High-voltage test techniques -<br>Part 1: General definitions and test<br>requirements  | EN 60060-1    | -           |
| IEC 60060-2        | -           | High-voltage test techniques -<br>Part 2: Measuring systems   | EN 60060-2    | -           |
| IEC 60068-2-11     | 1981        | Environmental testing -<br>Part 2: Tests - Test Ka: Salt mist   | EN 60068-2-11 | 1999        |
| IEC 60068-2-14     | -           | Environmental testing -<br>Part 2-14: Tests - Test N: Change of<br>temperature  | EN 60068-2-14 | -           |
| IEC 60071-1        | -           | Insulation co-ordination -<br>Part 1: Definitions, principles and rules   | EN 60071-1    | -           |
| IEC 60071-2        | 1996        | Insulation co-ordination -<br>Part 2: Application guide   | EN 60071-2    | 1997        |
| IEC 60270          | -           | High-voltage test techniques -<br>Partial discharge measurements  | EN 60270      | -           |
| IEC 60507          | 2013        | Artificial pollution tests on high-voltage<br>ceramic and glass insulators to be used on<br>a.c. systems  | EN 60507      | 2014        |
| IEC 62217          | -           | Polymeric HV insulators for indoor and<br>outdoor use - General definitions, test<br>methods and acceptance criteria  | EN 62217      | -           |
| IEC 62271-1        | 2007        | High-voltage switchgear and controlgear -<br>Part 1: Common specifications  | EN 62271-1    | 2008        |
| IEC 62271-200      | 2011        | High-voltage switchgear and controlgear -<br>Part 200: AC metal-enclosed switchgear<br>and controlgear for rated voltages above<br>1 kV and up to and including 52 kV | EN 62271-200  | 2012        |
| IEC 62271-203      | 2011        | High-voltage switchgear and controlgear -<br>Part 203: Gas-insulated metal-enclosed<br>switchgear for rated voltages above 52 kV                                      | EN 62271-203  | 2012        |

| <u>Publication</u> | <u>Year</u> | <u>Title</u>   | <u>EN/HD</u>  | <u>Year</u> |
|--------------------|-------------|--|---------------|-------------|
| IEC/TS 60815-1     | 2008        | Selection and dimensioning of high-voltage insulators intended for use in polluted conditions -<br>Part 1: Definitions, information and general principles     | -             | -           |
| IEC/TS 60815-2     | 2008        | Selection and dimensioning of high-voltage insulators intended for use in polluted conditions -<br>Part 2: Ceramic and glass insulators for a.c. systems       | -             | -           |
| ISO 4287           | -           | Geometrical Product Specifications (GPS) -<br>Surface texture: Profile method - Terms, definitions and surface texture parameters                              | EN ISO 4287   | -           |
| ISO 4892-1         | -           | Plastics - Methods of exposure to laboratory light sources -<br>Part 1: General guidance   | EN ISO 4892-1 | -           |
| ISO 4892-2         | -           | Plastics - Methods of exposure to laboratory light sources -<br>Part 2: Xenon-arc lamps  | EN ISO 4892-2 | -           |
| ISO 4892-3         | -           | Plastics - Methods of exposure to laboratory light sources -<br>Part 3: Fluorescent UV lamps   | EN ISO 4892-3 | -           |
| CISPR/TR 18-2      | -           | Radio interference characteristics of overhead power lines and high-voltage equipment -<br>Part 2: Methods of measurement and procedure for determining limits | -             | -           |

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## INTRODUCTION

This part of IEC 60099 presents the minimum criteria for the requirements and testing of gapless metal-oxide surge arresters that are applied to a.c. power systems with  $U_s$  above 1 kV.



## SURGE ARRESTERS –

### Part 4: Metal-oxide surge arresters without gaps for a.c. systems

#### 1 Scope

This part of IEC 60099 applies to non-linear metal-oxide resistor type surge arresters without spark gaps designed to limit voltage surges on a.c. power circuits with  $U_s$  above 1 kV.

#### 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 60060-1, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60060-2, *High-voltage test techniques – Part 2: Measuring systems*

IEC 60068-2-11:1981, *Environmental testing – Part 2-11: Tests – Test kA: Salt mist*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60071-1, *Insulation co-ordination – Part 1: Definitions, principles and rules*

IEC 60071-2:1996, *Insulation co-ordination – Part 2: Application guide*

IEC 60270, *High-voltage test techniques – Partial discharge measurements*

IEC 60507:2013, *Artificial pollution tests on high-voltage insulators to be used on a.c. systems*

IEC TS 60815-1:2008, *Selection and dimensioning of high voltage insulators intended for use in polluted conditions – Part 1: Definitions, information and general principles*

IEC TS 60815-2:2008, *Selection and dimensioning of high voltage insulators intended for use in polluted conditions – Part 2: Ceramic and glass insulators for a.c. systems*

IEC 62217, *Polymeric insulators for indoor and outdoor use – General definitions, test methods and acceptance criteria*

IEC 62271-1:2007, *High-voltage switchgear and controlgear – Part 1: Common specifications*

IEC 62271-200:2011, *High-voltage switchgear and controlgear – Part 200: A.C. metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

IEC 62271-203:2011, *High-voltage switchgear and controlgear – Part 203: Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV*