

# INTERNATIONAL STANDARD

# IEC 60099-4

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## Surge arresters –

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

Withhold

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### SURGE ARRESTERS –

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

#### FOREWORD

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This International Standard has been prepared by IEC technical committee 37: Surge arresters.

This consolidated version of IEC 60099-4 is based on the first edition (1991) [documents 37(CO)38 and 37(CO)45], its amendment 1 (1998) [documents 37/192/FDIS and 37/198/RVD] and its amendment 2 (2001) [documents 37/268/FDIS and 37/270/RVD].

It bears the edition number 1.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

Annexes A, B, C, D, F and N form an integral part of this standard.

Annexes E, G, H, J, K, L, M and O are for information only.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2003. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

## INTRODUCTION

This International Standard presents the minimum criteria for the requirements and testing of gapless metal-oxide surge arresters that are applied to a.c. power systems.

Arresters covered by this standard are commonly applied to live/front overhead installations in place of the non-linear resistor type gapped arresters covered in IEC 60099-1. Protection of low-voltage circuits, below 3 kV, is under consideration.

An accelerated ageing procedure is incorporated in the standard to simulate the long-term effects of voltage and temperature on the metal-oxide arrester. This is necessary since the arrester's resistor elements will have system power frequency voltage continuously applied across them during the arrester's time in service.

Withdrawn



## SURGE ARRESTERS –

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

#### SECTION 1: GENERAL

##### 1.1 Scope

This International Standard applies to non-linear metal-oxide resistor type surge arresters without spark gaps designed to limit voltage surges on a.c. power circuits.

##### 1.2 Normative references

The following referenced documents are indispensable for the application 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 60060-1:1989, *High-voltage test techniques – Part 1: General definitions and test requirements*

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

IEC 60068-2-14:1984, *Environmental testing – Part 2: Tests. Test N: Change of temperature*

IEC 60068-2-17:1994, *Basic environmental testing procedures – Part 2: Tests – Test Q: Sealing*

IEC 60068-2-42:1982, *Environmental testing – Part 2: Tests. Test Kc: Sulphur dioxide test for contacts and connections*

IEC 60071: *Insulation co-ordination*

IEC 60071-2:1976, *Insulation co-ordination – Part 2: Application guide*

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

IEC 60099-1:1991, *Surge arresters – Part 1: Non-linear resistor type gapped arresters for a.c. systems*

IEC 60099-3:1990, *Surge arresters – Part 3: Artificial pollution testing of surge arresters*

IEC 60270:1981, *Partial discharge measurements*

IEC 60298:1990, *A.C. metal-enclosed switchgear and controlgear for rated voltages above 1 kV to and up to and including 52 kV*

IEC 60507:1991, *Artificial pollution tests on high-voltage insulators to be used in a.c. systems*

IEC 60517:1990, *Gas-insulated metal-enclosed switchgear for rated voltages of 72,5 kV and above*

IEC 60694:1996, *Common specifications for high-voltage switchgear and controlgear standards*

IEC 60721-3-2:1997, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 2: Transportation*

IEC 60815:1986, *Guide for the selection of insulators in respect of polluted conditions*

IEC 61109:1992, *Composite insulators for a.c. overhead lines with a nominal voltage greater than 1 000 V – Definitions, test methods and acceptance criteria*

IEC 61166:1993, *High-voltage alternating current circuit-breakers – Guide for seismic qualification of high-voltage alternating current circuit-breakers*

IEC 61330:1995, *High-voltage/low voltage prefabricated substations*

IEEE C62.11:1999, *Standard for Metal-Oxide Surge Arresters for Alternating Current Power Circuits*

