Surge arresters –

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

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CONTENTS

FOREWORD ............................................................................................................................ 13
INTRODUCTION ....................................................................................................................... 15

SECTION 1: GENERAL
1.1 Scope .................................................................................................................................. 17
1.2 Normative references .......................................................................................................... 17

SECTION 2: DEFINITIONS

SECTION 3: IDENTIFICATION AND CLASSIFICATION
3.1 Arrester identification ......................................................................................................... 35
3.2 Arrester classification .......................................................................................................... 37

SECTION 4: STANDARD RATINGS
4.1 Standard rated voltages ...................................................................................................... 39
4.2 Standard rated frequencies ................................................................................................. 39
4.3 Standard nominal discharge currents .................................................................................. 39
4.4 Service conditions ............................................................................................................... 39

SECTION 5: REQUIREMENTS
5.1 Insulation withstand of the arrester housing .................................................................... 41
5.2 Reference voltage ............................................................................................................... 41
5.3 Residual voltages .............................................................................................................. 41
5.4 Internal partial discharge .................................................................................................... 41
5.5 Seal leak rate ...................................................................................................................... 43
5.6 Current distribution in a multi-column arrester ................................................................. 43
5.7 Thermal stability ................................................................................................................. 43
5.8 Long duration current impulse withstand ......................................................................... 43
5.9 Operating duty .................................................................................................................... 43
5.10 Power frequency voltage versus time characteristics of an arrester ............................. 45
5.11 Short-circuit ...................................................................................................................... 45
5.12 Disconnectors .................................................................................................................... 45
5.13 Requirements for auxiliary equipment such as grading components .......................... 45
5.14 Mechanical loads .............................................................................................................. 45

SECTION 6: GENERAL TESTING PROCEDURE
6.1 Measuring equipment and accuracy .................................................................................. 47
6.2 Reference voltage measurements ...................................................................................... 47
6.3 Test samples ....................................................................................................................... 47
SECTION 7: TYPE TESTS (DESIGN TESTS)

7.1 General.................................................................49
7.2 Insulation withstand tests on the arrester housing.........................51
7.3 Residual voltage tests................................................53
7.4 Long duration current impulse withstand test..................................59
7.5 Operating duty tests..................................................61
7.6 Tests of arrester disconnectors fault indicators............................77
7.7 Short-circuit tests..................................................................81
7.8 Internal partial discharge tests.............................................81

SECTION 8: ROUTINE TESTS AND ACCEPTANCE TESTS

8.1 Routine tests......................................................................81
8.2 Acceptance tests............................................................83

SECTION 9: TEST REQUIREMENTS ON POLYMER-HOUSED
SURGE ARRESTERS

9.1 General...........................................................................85
9.2 Definitions........................................................................85
9.3 Identification and classification...............................................85
9.4 Standard ratings................................................................85
9.5 Requirements.....................................................................85
9.6 General testing procedure..................................................85
9.7 Type tests (design tests)....................................................87

SECTION 10: TEST REQUIREMENTS ON GAS-INSULATED METAL
ENCLOSED ARRESTERS (GIS-ARRESTERS)

10.1 General...........................................................................105
10.2 Definitions.......................................................................105
10.3 Arrester identification (nameplate).........................................105
10.4 Standard rating................................................................105
10.5 Requirements...................................................................107
10.6 General testing procedures................................................109
10.7 Type tests (design tests)....................................................109
10.8 Routine tests....................................................................117
10.9 Test after erection on site..................................................117

SECTION 11: SEPARABLE AND DEADFRONT ARRESTERS

11.1 General...........................................................................123
11.2 Definitions.......................................................................123
11.3 Arrester identification.......................................................123
11.4 Standard ratings.............................................................123
11.5 Requirements...................................................................123
11.6 General testing procedure................................................123
11.7 Type tests (design tests)....................................................123
11.8 Routine tests and acceptance tests ......................................131
SECTION 12: LIQUID-IMMERSED ARRESTERS

12.1 General .................................................................................................................. 131
12.2 Definitions .............................................................................................................. 131
12.3 Arrester identification .......................................................................................... 131
12.4 Standard ratings .................................................................................................... 131
12.5 Requirements ......................................................................................................... 133
12.6 General testing procedure .................................................................................. 133
12.7 Type tests (design tests) ...................................................................................... 133
12.8 Routine tests and acceptance tests ...................................................................... 137

SECTION 13: MECHANICAL CONSIDERATIONS FOR SURGE ARRESTERS

13.1 General .................................................................................................................. 139
13.2 Definitions .............................................................................................................. 139
13.3 Identification and classification ........................................................................... 139
13.4 Standard ratings .................................................................................................... 139
13.5 Requirements ......................................................................................................... 141
13.6 General testing procedure .................................................................................. 141
13.7 Type tests (design tests) ...................................................................................... 141

Annex A (normative) Abnormal service conditions ......................................................... 157
Annex B (normative) Test to verify thermal equivalency between complete arrester and arrester section ........................................................................................................ 159
Annex C (normative) Requirements for High-Lightning Duty arresters for voltage range 1 kV to 52 kV ...................................................................................... 161
Annex D (normative) Procedure to verify the power frequency voltage versus time characteristics of an arrester ................................................................................. 165
Annex E (informative) Guide to selection of line discharge class ................................... 169
Annex F (normative) Artificial pollution test with respect to the thermal stress on porcelain-housed multi-unit metal-oxide surge arresters ................................. 173
Annex G (informative) Typical information given with enquiries and tenders ................. 205
Annex H (informative) Typical circuit for high current impulse operating duty test (see 7.5.4) .................................................................................................................. 209
Annex J (informative) Typical circuit for a distributed constant impulse generator for the long duration current impulse withstand test (see 7.4) ............................... 213
Annex K (informative) Typical maximum residual voltages ........................................... 215
Annex L (informative) Ageing test procedure – Arrhenius law – Problems with higher temperatures ........................................................................................................... 217
Annex M (informative) Guide for the determination of the voltage distribution along metal-oxide surge arresters ............................................................................... 221
Annex N (normative) Mechanical considerations .......................................................... 237
Annex O (informative) Short-circuit tests ...................................................................... 245

Figure 1 – Operating duty test on 10 000 A line discharge class 1, 5 000 A, 2 500 A and 1 500 A arresters, see 7.5.4 ............................................................................................ 151
Figure 2 – Operating duty test on 10 000 A arresters line discharge classes 2 and 3 and 20 000 A arresters line discharge classes 4 and 5, see 7.5.5 ........................................ 153
Figure 3 – Thermal stability test on 10 000 A line discharge class 1, 5 000 A, 2 500 A and 1 500 A arresters, see 8.2.2 ................................................................. 155
Table 1 – Arrester classification and test requirements ........................................37
Table 2 – Steps of rated voltages ........................................................................39
Table 3 – Peak currents for switching impulse residual voltage test ..................57
Table 4 – Parameters for the line discharge test on 20 000 A and 10 000 A arresters ....59
Table 5 – Requirements for the long-duration current impulse test on 5 000 A and 2 500 A arresters .................................................................61
Table 7 – Determination of elevated rated and continuous operating voltages .......67
Table 6 – Requirements for high current impulses ..................................................71
Table 8 – 10 000 A and 20 000 A three-phase GIS-arresters – Required withstand voltages .........................................................................................119
Table 9 – 1 500 A, 2 500 A and 5 000 A three-phase GIS-arresters – Required withstand voltages .........................................................................................121
Table 10 – Insulation withstand test voltages for unscreened separable arresters ....127
Table 11 – Insulation withstand test voltages for deadfront arresters or separable arresters in a screened housing .........................................................127
Table 12 – Partial discharge test values for separable and deadfront arresters .......131
Table C.1 – Test requirements on 20 000 A High Lightning Duty arresters .........161
Table F.1 – Mean external charge for different pollution severities ......................181
Table F.2 – Characteristic of the sample used for the pollution test .....................183
Table F.3a – Requirements for the device used for the measurement of the charge .................................................................185
Table F.3b – Requirements for the device used for the measurement of the temperature ....187
Table F.4 – Calculated values of $\Delta T_z$ max for the selected example ..............199
Table F.5 – Results of the salt fog test for the selected example ..........................199
Table F.6 – Calculated values of $\Delta T_z$ and of $T_{0D}$ after 5 cycles for the selected example ....201
Table F.7 – Calculated values of $\Delta T_z$ and of $T_{0D}$ after 10 cycles for the selected example .......................................................................................203
Table K.1 – Residual voltages for 20 000 A and 10 000 A arresters in per unit of rated voltage .........................................................................................215
Table K.2 – Residual voltages for 5 000 A, 2 500 A and 1 500 A arresters in per unit of rated voltage .........................................................................................215
Table L.1 – Minimum demonstrated life time prediction ......................................217
Table L.2 – Relationship between test durations at 115 °C and equivalent time at upper limit of ambient temperature ........................................219
Table M.1 – Results from example calculations ....................................................229
Table O.1 – Method of preparing arresters with a pressure relief device for conducting short-circuit current ...............................................................247
Table O.2 – Method of preparing arresters without a pressure relief device for conducting short-circuit current ...............................................................249
Table O.3 – Required currents for short-circuit tests .............................................257
INTERNATIONAL ELECTROTECHNICAL COMMISSION

SURGE ARRESTERS –

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

FOREWORD

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3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.

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6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

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.
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 60071: Insulation co-ordination


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
<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>IEC 60694:1996</td>
<td><strong>Common specifications for high-voltage switchgear and controlgear standards</strong></td>
</tr>
<tr>
<td>IEC 60721-3-2:1997</td>
<td><strong>Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 2: Transportation</strong></td>
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<tr>
<td>IEC 60815:1986</td>
<td><strong>Guide for the selection of insulators in respect of polluted conditions</strong></td>
</tr>
<tr>
<td>IEC 61109:1992</td>
<td><strong>Composite insulators for a.c. overhead lines with a nominal voltage greater than 1 000 V – Definitions, test methods and acceptance criteria</strong></td>
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<tr>
<td>IEC 61166:1993</td>
<td><strong>High-voltage alternating current circuit-breakers – Guide for seismic qualification of high-voltage alternating current circuit-breakers</strong></td>
</tr>
<tr>
<td>IEC 61330:1995</td>
<td><strong>High-voltage/low voltage prefabricated substations</strong></td>
</tr>
<tr>
<td>IEEE C62.11:1999</td>
<td><strong>Standard for Metal-Oxide Surge Arresters for Alternating Current Power Circuits</strong></td>
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