

<b>STN</b>	<b>Zvodiče prepätia</b> <b>Časť 8: Zvodiče prepätia na báze oxidov kovov s</b> <b>vonkajším sériovým iskriskom (EGLA) pre</b> <b>nadzemné prenosové a distribučné vedenia</b> <b>sústav so striedavým napätím nad 1 kV</b>	<b>STN</b> <b>EN IEC 60099-8</b>  35 4870
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Surge arresters - Part 8: Metal-oxide surge arresters with external series gap (EGLA) for overhead transmission and distribution lines of a.c. systems above 1 kV

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/19

Obsahuje: EN IEC 60099-8:2018, IEC 60099-8:2017

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English Version

**Surge arresters - Part 8: Metal-oxide surge arresters with external series gap (EGLA) for overhead transmission and distribution lines of a.c. systems above 1 kV  
(IEC 60099-8:2017)**

Parafoudres - Partie 8: Parafoudres à oxyde métallique avec éclateur extérieur en série (EGLA) pour lignes aériennes de transmission et de distribution de réseaux à courant alternatif de plus de 1 kV  
(IEC 60099-8:2017)

Überspannungsableiter - Teil 8: Metalloxid-Überspannungsableiter mit externer Serienfunkenstrecke (EGLA) für Übertragungs- und Verteilungsleitungen von Wechselstromsystemen über 1 kV  
(IEC 60099-8:2017)

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**EN IEC 60099-8:2018 (E)****European foreword**

The text of document 37/436/FDIS, future edition 2 of IEC 60099-8, prepared by IEC/TC 37 "Surge arresters" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60099-8:2018.

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) 2018-09-19
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-12-19

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ISO 3274            NOTE            Harmonized as EN ISO 3274.

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

Publication	Year	Title	EN/HD	Year
IEC 60060-1	2010	High-voltage test techniques -- Part 1: General definitions and test requirements	EN 60060-1	2010
IEC 60060-2	2010	High-voltage test techniques -- Part 2: Measuring systems	EN 60060-2	2011
IEC 60068-2-11	1981	Basic environmental testing procedures - Part 2-11: Tests - Test Ka: Salt mist	EN 60068-2-11	1999
IEC 60068-2-14	2009	Environmental testing -- Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	2009
IEC 60099-4	2014	Surge arresters - Part 4: Metal-oxide surge arresters without gaps for a.c. systems	EN 60099-4	2014
IEC 60270	2000	High-voltage test techniques - Partial discharge measurements	EN 60270	2001
IEC 60507	2013	Artificial pollution tests on high-voltage ceramic and glass insulators to be used on a.c. systems	EN 60507	2014
IEC 62217	2012	Polymeric HV insulators for indoor and outdoor use - General definitions, test methods and acceptance criteria	EN 62217	2013
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		-
ISO 4287	-	Geometrical Product Specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters	EN ISO 4287	-
ISO 4892-1	-	Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps	EN ISO 4892-1	-
ISO 4892-2	-		EN ISO 4892-2	-
ISO 4892-3	-		EN ISO 4892-3	-



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Edition 2.0 2017-11

# **INTERNATIONAL STANDARD**



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**Surge arresters –  
Part 8: Metal-oxide surge arresters with external series gap (EGLA) for overhead  
transmission and distribution lines of a.c. systems above 1 kV**





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IEC 60099-8

Edition 2.0 2017-11

# INTERNATIONAL STANDARD



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**Surge arresters –  
Part 8: Metal-oxide surge arresters with external series gap (EGLA) for overhead  
transmission and distribution lines of a.c. systems above 1 kV**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## CONTENTS

FOREWORD .....	6
INTRODUCTION .....	8
1 Scope .....	9
2 Normative references .....	9
3 Terms and definitions .....	10
4 Identification and classification .....	13
4.1 EGLA identification .....	13
4.2 EGLA classification .....	13
5 Standard ratings and service conditions .....	14
5.1 Standard rated voltages .....	14
5.2 Standard rated frequencies .....	14
5.3 Standard nominal discharge currents .....	14
5.4 Service conditions .....	14
5.4.1 Normal service conditions .....	14
5.4.2 Special service conditions .....	14
6 Requirements .....	15
6.1 Insulation withstand of the SVU and the complete EGLA .....	15
6.1.1 Insulation withstand of the housing of the SVU .....	15
6.1.2 Insulation withstand of EGLA with shorted (failed) SVU .....	15
6.2 Residual voltages .....	15
6.3 High current duty .....	15
6.4 Lightning discharge capability .....	15
6.5 Short-circuit performance of the SVU .....	15
6.6 Mechanical performance .....	16
6.7 Weather aging of SVU .....	16
6.8 Reference voltage of the SVU .....	16
6.9 Internal partial discharges .....	16
6.10 Coordination between insulator withstand and EGLA protective level .....	16
6.11 Follow current interrupting .....	17
6.12 Electromagnetic compatibility .....	17
6.13 End of life .....	17
7 General testing procedure .....	17
7.1 Measuring equipment and uncertainty .....	17
7.2 Test samples .....	17
8 Type tests .....	18
8.1 General .....	18
8.2 Insulation withstand tests on the SVU housing and on the EGLA with failed SVU .....	18
8.2.1 General .....	18
8.2.2 Insulation withstand test on the SVU housing .....	19
8.2.3 Insulation withstand tests on EGLA with failed SVU .....	19
8.3 Residual voltage tests .....	20
8.3.1 General .....	20
8.3.2 Procedure for correction and calculation of inductive voltages .....	20
8.3.3 Lightning current impulse residual voltage test .....	21



8.3.4	High current impulse residual voltage test .....	22
8.4	Standard lightning impulse sparkover test .....	22
8.5	High current impulse withstand test.....	23
8.5.1	Selection of test samples .....	23
8.5.2	Test procedure .....	23
8.5.3	Test evaluation .....	24
8.6	Test to verify the repetitive charge transfer rating, $Q_{RS}$ with lightning discharges .....	24
8.6.1	MO resistors .....	24
8.6.2	Series gap .....	26
8.7	Short-circuit tests .....	27
8.7.1	General .....	27
8.7.2	Preparation of the test samples .....	28
8.7.3	Mounting of the test sample .....	29
8.7.4	High-current short-circuit tests .....	30
8.7.5	Low-current short-circuit test .....	32
8.7.6	Evaluation of test results .....	32
8.8	Follow current interrupting test.....	38
8.8.1	General .....	38
8.8.2	"Test method A".....	38
8.8.3	"Test method B".....	40
8.9	Mechanical load tests on the SVU.....	42
8.9.1	General .....	42
8.9.2	Bending test .....	42
8.9.3	Vibration test .....	51
8.10	Weather aging tests .....	52
8.10.1	General .....	52
8.10.2	Sample preparation .....	52
8.10.3	Test procedure .....	52
8.10.4	Test evaluation .....	52
8.10.5	Additional test procedure for polymer (composite and cast resin) housed SVUs.....	53
8.11	Radio interference voltage (RIV) test .....	53
9	Routine tests .....	53
9.1	General.....	53
10	Acceptance tests .....	54
10.1	General.....	54
10.2	Reference voltage measurement of SVU.....	54
10.3	Internal partial discharge test of SVU.....	55
10.4	Radio interference voltage (RIV) test .....	55
10.5	Test for coordination between insulator withstand and EGLA protective level.....	55
10.5.1	General .....	55
10.5.2	Steep front impulse test.....	55
10.5.3	Standard lightning impulse sparkover test.....	56
10.6	Follow current interrupting test.....	56
10.6.1	General .....	56
10.6.2	Test procedure .....	57
10.6.3	Test sequence .....	57
10.6.4	Test evaluation .....	57

10.7	Vibration test on the SVU with attached electrode .....	57
10.7.1	General .....	57
10.7.2	Sample preparation .....	57
10.7.3	Test procedure and test condition .....	57
10.7.4	Test evaluation .....	58
Annex A (informative)	Example of a test circuit for the follow current interrupting test .....	59
Annex B (normative)	Mechanical considerations .....	60
B.1	Test of bending moment.....	60
B.2	Definition of mechanical loads .....	61
B.3	Definition of seal leak rate .....	62
B.4	Calculation of wind-bending-moment.....	63
B.5	Flow chart – Procedures of tests of bending moment for porcelain/cast resin and polymer-housed SVUs.....	64
Annex C (normative)	Special service conditions .....	65
C.1	General.....	65
C.2	Temperature in excess of +40 °C or below –40 °C .....	65
C.3	Application at altitudes higher than 1 000 m.....	65
C.4	Fumes or vapours that may cause deterioration of insulating surface or mounting hardware .....	65
C.5	Excessive contamination by smoke, dirt, salt spray or other conducting materials.....	65
C.6	Excessive exposure to moisture, humidity, dripping water, or steam .....	65
C.7	Live washing of arrester.....	65
C.8	Unusual transportation or storage .....	65
C.9	Non-vertical erection and suspended erection.....	66
C.10	Wind speed > 34 m/s .....	66
C.11	Earthquake .....	66
C.12	Torsional loading of the arrester .....	66
Bibliography	.....	67
Figure 1	– Configuration of an EGLA with insulator and arcing horn.....	8
Figure 2	– Test procedure to verify the repetitive charge transfer rating, $Q_{RS}$ .....	25
Figure 3	– Test procedure to verify the repetitive charge withstand of the series gap .....	27
Figure 4	– Examples of SVU units.....	36
Figure 5	– Short-circuit test setup .....	37
Figure 6	– Example of a test circuit for re-applying pre-failing circuit immediately before applying the short-circuit test current .....	38
Figure 7	– Thermo-mechanical test.....	46
Figure 8	– Example of the test arrangement for the thermo-mechanical test and direction of the cantilever load .....	47
Figure 9	– Test sequence of the water immersion test .....	48
Figure A.1	– Example of a test circuit for the follow current interrupting test .....	59
Figure B.1	– Bending moment – Multi-unit SVU.....	60
Figure B.2	– Definition of mechanical loads .....	61
Figure B.3	– SVU unit .....	62
Figure B.4	– SVU dimensions .....	63

Figure B.5 – Procedures of tests of bending moment for porcelain/cast resin and polymer-housed SVUs .....	64
Table 1 – EGLA classification – “Series X” and “Series Y” .....	13
Table 2 – Steps of rated voltages (r.m.s. values) .....	14
Table 3 – Type tests (all tests to be performed with or without insulator assembly; by manufacturer's decision) .....	18
Table 4 – Test requirements .....	34
Table 5 – Required currents for short-circuit tests .....	35
Table 6 – Acceptance tests .....	54
Table 7 – Virtual steepness of wave front of steep front impulses .....	55

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## SURGE ARRESTERS –

### **Part 8: Metal-oxide surge arresters with external series gap (EGLA) for overhead transmission and distribution lines of a.c. systems above 1 kV**

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International Standard IEC 60099-8 has been prepared by IEC technical committee 37: Surge arresters.

This second edition cancels and replaces the first edition published in 2011. This edition constitutes a technical revision.

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

- a) The Lightning discharge capability test has been completely re-written and re-named to Test to verify the repetitive charge transfer rating, Qrs with lightning discharges to reflect changes introduced in IEC 60099-4 Ed. 3 (2014) regarding new methods for rating the energy and charge handling capability of metal-oxide arresters. In addition to testing to

evaluate the performance of the MO resistors, procedures for evaluating the performance of the EGLA series gaps have been introduced.

- b) Omissions from Ed. 1 of this standard have been included, notably an RIV test and a means for determining the thermal time constant of the SUV portion of the EGLA.
- c) Definitions for new terms have been added
- d) A number of NOTES in Ed. 1 have been converted to normative requirements

A number of editorial changes have been made throughout the document to improve grammar and general flow of information.

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

FDIS	Report on voting
37/436/FDIS	37/438/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 60098 series, under the general title *Surge arresters*, 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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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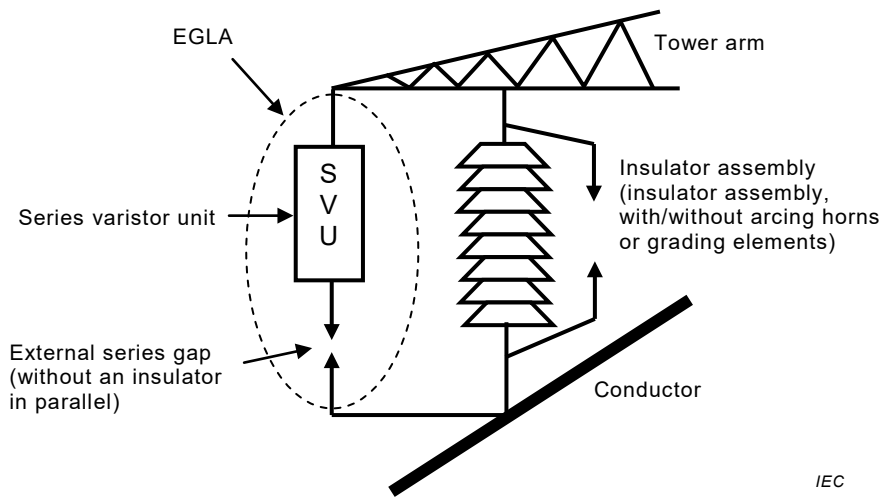
## INTRODUCTION

This part of IEC 60099 applies to the externally gapped line arrester (EGLA)

This type of surge arrester is connected directly in parallel with an insulator assembly. It comprises a series varistor unit (SVU), made up from non-linear metal-oxide resistors encapsulated in a polymer or porcelain housing, and an external series gap (see Figure 1).

The purpose of an EGLA is to protect the parallel-connected insulator assembly from lightning-caused over-voltages. The external series gap, therefore, should spark over only due to fast-front over-voltages. The gap should withstand all power-frequency and slow-front over-voltages occurring on the system.

In the event of SVU failure, the external series gap should be able to isolate the SVU from the system.



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**Figure 1 – Configuration of an EGLA with insulator and arcing horn**

## **SURGE ARRESTERS –**

### **Part 8: Metal-oxide surge arresters with external series gap (EGLA) for overhead transmission and distribution lines of a.c. systems above 1 kV**

#### **1 Scope**

This part of IEC 60099 covers metal-oxide surge arresters with external series gap (externally gapped line arresters (EGLA)) that are applied on overhead transmission and distribution lines, only to protect insulator assemblies from lightning-caused flashovers.

This document defines surge arresters to protect the insulator assembly from lightning-caused over-voltages only. Therefore, and since metal-oxide resistors are not permanently connected to the line, the following items are not considered for this document:

- switching impulse spark-over voltage;
- residual voltage at steep current and switching current impulse;
- thermal stability;
- long-duration current impulse withstand duty;
- power-frequency voltage versus time characteristics of an arrester;
- disconnecter test;
- aging duties by power-frequency voltage.

Considering the particular design concept and the special application on overhead transmission and distribution lines, some unique requirements and tests are introduced, such as the verification test for coordination between insulator withstand and EGLA protective level, the follow current interrupting test, mechanical load tests, etc.

Designs with the EGLA's external series gap installed in parallel to an insulator are not covered by this document.

#### **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 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60060-2:2010, *High-voltage test techniques – Part 2: Measuring systems*

IEC 60068-2-11:1981, *Basic environmental testing procedures – Part 2-11: Tests – Test Ka: Salt mist*

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