



SLOVENSKI STANDARD
SIST EN 60079-11:2007
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SIST EN 50020:2003

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Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

Explosionsfähige Atmosphäre - Teil 11: Geräteschutz durch Eigensicherheit "i"

Atmospheres explosives - Partie 11: Protection de l'équipement par sécurité intrinsèque "i"

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Ta slovenski standard je istoveten z: EN 60079-11:2007

ICS:

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SIST EN 60079-11:2007 **en,fr,de**

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English version

**Explosive atmospheres -
Part 11: Equipment protection by intrinsic safety "i"
(IEC 60079-11:2006)**

Atmosphères explosives -
Partie 11: Protection de l'équipement
par sécurité intrinsèque "i"
(CEI 60079-11:2006 + corrigendum 2006)

Explosionsfähige Atmosphäre -
Teil 11: Geräteschutz durch
Eigensicherheit "i"
(IEC 60079-11:2006)

This European Standard was approved by CENELEC on 2006-10-01. 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 Central Secretariat or to any CENELEC member.

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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 Central Secretariat has the same status as the official versions.

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

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 31G/159/FDIS, future edition 5 of IEC 60079-11, prepared by SC 31G, Intrinsically safer apparatus, of IEC TC 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60079-11 on 2006-10-01.

This European Standard supersedes EN 50020:2002.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2007-08-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2009-10-01

This standard supplements and modifies the general requirements of EN 60079-0:2006, except as indicated in Table 1 (see Scope).

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 94/9/EC. See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60079-11:2006 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 60079-15 | NOTE Harmonized as EN 60079-15:2005 (not modified). |
| IEC 61086-1 | NOTE Harmonized as EN 61086-1:2004 (not modified). |

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-0 (mod)	2004	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements	EN 60079-0	2006
IEC 60079-7	- ¹⁾	Explosive atmospheres - Part 7: Equipment protection by Increased safety "e"	EN 60079-7	2007 ²⁾
IEC 60079-25	- ¹⁾	Electrical apparatus for explosive gas atmospheres - Part 25: Intrinsically safe systems	EN 60079-25 + corr. April	2004 ²⁾ 2006
IEC 60079-27	- ¹⁾	Electrical apparatus for explosive gas atmospheres - Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non-incendive concept (FNICO)	EN 60079-27	2006 ²⁾
IEC 60085	- ¹⁾	Electrical insulation - Thermal classification	EN 60085	2004 ²⁾
IEC 60112	- ¹⁾	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003 ²⁾
IEC 60127	Series	Miniature fuses	EN 60127	Series
IEC 60317-3	- ¹⁾	Specifications for particular types of winding wires - Part 3: Polyester enamelled round copper wire, class 155	-	-
IEC 60317-7	- ¹⁾	Specifications for particular types of winding wires - Part 7: Polyimide enamelled round copper wire, class 220	EN 60317-7	1994 ²⁾
IEC 60317-8	- ¹⁾	Specifications for particular types of winding wires - Part 8: Polyesterimide enamelled round copper wire, class 180	EN 60317-8	1994 ²⁾

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60317-13	- ¹⁾	Specifications for particular types of winding wires - Part 13: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200	EN 60317-13	1994 ²⁾
IEC 60529	- ¹⁾	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 ²⁾ 1993
IEC 60664-1 + A1 + A2	1992 2000 2002	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2003
IEC 60664-3	2003	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2003
ANSI/UL 248-1	- ¹⁾	Low-voltage Fuses - Part 1: General requirements	-	-

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Annex ZZ (informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers only the following essential requirements out of those given in Annex II of the EC Directive 94/9/EC:

- ER 1.0.1, ER 1.0.2, ER 1.0.4, ER 1.0.5 (partly), ER 1.0.6 (partly)
- ER 1.1 (partly)
- ER 1.2.1 (partly), ER 1.2.2 (partly), ER 1.2.5, ER 1.2.6
- ER 1.3.1
- ER 1.6.4
- ER 2.0.1.1, ER 2.0.1.2, ER 2.0.1.3 (partly), ER 2.0.1.4
- ER 2.0.2.1, ER 2.0.2.2, ER 2.0.2.3 (partly)
- ER 2.1.1.1 to ER 2.1.1.3
- ER 2.2.1.1 to ER 2.2.1.3

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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IEC 60079-11

Edition 5.0 2006-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Explosive atmospheres –
Part 11: Equipment protection by intrinsic safety "i"
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Atmosphères explosives –
Partie 11: Protection de l'équipement par sécurité intrinsèque «i»
SIST EN 60079-11:2007
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PRICE CODE
CODE PRIX

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CONTENTS

FOREWORD.....	6
1 Scope.....	8
2 Normative references.....	10
3 Terms and definitions	11
4 Grouping and classification of intrinsically safe apparatus and associated apparatus	16
5 Levels of protection and ignition compliance requirements of electrical apparatus.....	16
5.1 General	16
5.2 Level of protection "ia".....	16
5.3 Level of protection "ib".....	17
5.4 Level of protection "ic".....	17
5.5 Spark ignition compliance	18
5.6 Thermal ignition compliance	18
5.7 Simple apparatus.....	22
6 Apparatus construction	22
6.1 Enclosures	23
6.2 Facilities for connection of external circuits	23
6.3 Separation distances	27
6.4 Protection against polarity reversal	38
6.5 Earth conductors, connections and terminals	38
6.6 Encapsulation.....	40
7 Components on which intrinsic safety depends.....	40
7.1 Rating of components.....	40
7.2 Connectors for internal connections, plug-in cards and components.....	41
7.3 Fuses	41
7.4 Primary and secondary cells and batteries	42
7.5 Semiconductors.....	46
7.6 Failure of components, connections and separations.....	47
7.7 Piezo-electric devices	48
7.8 Electrochemical cells for the detection of gases	48
8 Infallible components, infallible assemblies of components and infallible connections on which intrinsic safety depends.....	48
8.1 Mains transformers.....	48
8.2 Transformers other than mains transformers.....	50
8.3 Infallible windings	51
8.4 Current-limiting resistors.....	52
8.5 Blocking capacitors.....	52
8.6 Shunt safety assemblies	53
8.7 Wiring, printed circuit board tracks, and connections.....	54
8.8 Galvanically separating components	56

9	Diode safety barriers.....	57
9.1	General.....	57
9.2	Construction.....	57
10	Type verifications and type tests.....	57
10.1	Spark ignition test.....	57
10.2	Temperature tests.....	62
10.3	Dielectric strength tests.....	62
10.4	Determination of parameters of loosely specified components.....	63
10.5	Tests for cells and batteries.....	63
10.6	Mechanical tests.....	65
10.7	Tests for apparatus containing piezoelectric devices.....	65
10.8	Type tests for diode safety barriers and safety shunts.....	66
10.9	Cable pull test.....	67
10.10	Transformer tests.....	67
11	Routine verifications and tests.....	67
11.1	Routine tests for diode safety barriers.....	67
11.2	Routine tests for infallible transformers.....	68
12	Marking.....	68
12.1	General.....	68
12.2	Marking of connection facilities.....	69
12.3	Warning markings.....	69
12.4	Examples of marking.....	70
13	Documentation.....	71
	SIST EN 60079-11:2007	
Annex A (normative)	Assessment of intrinsically safe circuits.....	72
Annex B (normative)	Spark test apparatus for intrinsically safe circuits.....	94
Annex C (informative)	Measurement of creepage distances, clearances and separation distances through casting compound and through solid insulation.....	103
Annex D (informative)	Encapsulation.....	106
Annex E (informative)	Transient energy test.....	110
Annex F (normative)	Alternative separation distances for assembled printed circuit boards and separation of components.....	113
	Bibliography.....	117
	Figure 1 – Separation of intrinsically safe and non-intrinsically safe terminals.....	25
	Figure 2 – Example of separation of conducting parts.....	30
	Figure 3 – Determination of creepage distances.....	34
	Figure 4 – Creepage distances and clearances on printed circuit boards.....	35
	Figure 5– Examples of independent and non-independent connecting elements.....	39
	Figure 6 – Infallible solder connection of surface mount component in accordance with 8.7 c) 3).....	55
	Figure A.1 – Resistive circuits.....	75
	Figure A.2 – Group I capacitive circuits.....	76
	Figure A.3 – Group II capacitive circuits.....	77
	Figure A.4 – Inductive circuits of Group II.....	78

Figure A.5 – Group I inductive circuits	79
Figure A.6 – Group IIC inductive circuits.....	80
Figure A.7 – Simple inductive circuit.....	81
Figure A.8 – Simple capacitive circuit	81
Figure A.9 – Equivalent capacitance.....	93
Figure B.1 – Spark test apparatus for intrinsically safe circuits.....	97
Figure B.2 – Cadmium contact disc	98
Figure B.3 – Wire holder	98
Figure B.4 – Example of a practical design of spark test apparatus.....	99
Figure B.5 – Example of an explosion pressure switch.....	100
Figure B.6 – Example of automatic stopping by means of an explosion pressure switch	101
Figure B.7 – Arrangement for fusing tungsten wires.....	102
Figure B.8 – Circuit diagram for fusing tungsten wires	102
Figure C.1 – Measurement of clearance	103
Figure C.2 – Measurement of composite distances	103
Figure C.3 – Measurement of creepage.....	104
Figure C.4 – Measurement of composite creepage	105
Figure D.1 – Examples of encapsulated assemblies conforming to 6.3.4 and 6.6	107
Figure D.2 – Applications of encapsulation without enclosure.....	108
Figure E1 – Example of test circuit.....	112
Figure E2 – Example of output waveform.....	112
SIST EN 60079-11:2007	
Table 1 – Exclusion of specific clauses of IEC 60079-0.....	8
Table 2 – Assessment of temperature classification according to component size and ambient temperature	19
Table 3 – Temperature classification of copper wiring (in a maximum ambient temperature of 40 °C).....	20
Table 4 – Temperature classification of tracks on printed circuit boards (in a maximum ambient temperature of 40 °C)	21
Table 5 – Clearances, creepage distances and separations	29
Table 6 – Minimum foil thickness or minimum wire diameter of the screen in relation to the rated current of the fuse	49
Table 7 – Compositions of explosive test mixtures adequate for 1,0 safety factor.....	59
Table 8 – Compositions of explosive test mixtures adequate for 1,5 safety factor.....	59
Table 9 – Routine test voltages for infallible transformers	68
Table 10 – Text of warning markings	69
Table A.1 – Permitted short-circuit current corresponding to the voltage and the apparatus group.....	82
Table A.2 – Permitted capacitance corresponding to the voltage and the apparatus group	87
Table A.3 – Permitted reduction of effective capacitance when protected by a series resistance	93

Table F.1 – Clearances, creepage distances and separations for level of protection “ia” and “ib” when ingress protected, and special conditions of material and installation are fulfilled 115

Table F.2 – Clearances, creepage distances and separations for level of protection “ic” when ingress is protected by an enclosure or by special conditions of installation 116

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SIST EN 60079-11:2007

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPLOSIVE ATMOSPHERES –

Part 11: Equipment protection by intrinsic safety "i"

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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International Standard IEC 60079-11 has been prepared by subcommittee 31G: Intrinsically safe apparatus, of IEC technical committee 31: Equipment for explosive atmospheres.

This fifth edition cancels and replaces the fourth edition published in 1999 and constitutes a full technical revision.

The significant changes with respect to the previous edition are listed below:

- introduction of level of protection "ic" (this level of protection has been introduced to allow removal of the 'energy limitation' concept from 60079-15);
- introduction of Annex F that allows reduction in segregation distance requirements when the pollution degree has been reduced by installation or enclosure;
- introduction of alternative spark test apparatus construction when used with high current circuits;
- introduction of Annex E that provides a method for transient energy test;

- changes in the table of 'Temperature classification of tracks on PCB's' to allow correlation with IPC-2152;
- allowing alternative methods of rating resistors when used to limit the discharge from capacitance;
- introduction of methods to deal with the spark ignition energy consideration when high current low voltage cells and batteries are used;
- introduction of tests to measure the maximum pressure in sealed battery containers;
- introduction of methods to deal with fault application on voltage enhancement IC's;
- introduction of infallible connection methods for SMD's (surface mount devices);
- introduction of alternative methods to deal with the spark ignition energy in circuits with both inductance and capacitance;
- introduction of alternative high voltage test for transformers;
- introduction of methods to assess the reduction of effective capacitance when protected by series resistances;
- introduction of Group I data for permitted short circuit current and permitted capacitance in the tables of Annex A.

The text of this standard is based on the following documents:

FDIS	Report on voting
31G/159/FDIS	31G/161/RVD

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

This standard supplements and modifies the general requirements of IEC 60079-0, except as indicated in Table 1 (see Scope).

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

A list of all parts of the IEC 60079 series, under the general title: *Explosives atmospheres*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under <http://webstore.iec.ch> in the data related to the specific publication. At this date, the publication will be

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