



# SLOVENSKI STANDARD SIST EN 60079-14:2003

01-november-2003

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Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)

Elektrische Betriebsmittel für gasexplosionsgefährdete Bereiche - Teil 14: Errichtung elektrischer Anlagen in explosionsgefährdeten Bereichen (ausgenommen Grubenbaue)

Matériel électrique pour atmosphères explosives gazeuses - Partie 14: Installations électriques dans les emplacements dangereux (autres que les mines)

Ta slovenski standard je istoveten z: EN 60079-14:2003

**ICS:**

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**SIST EN 60079-14:2003**

**en,fr,de**

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EUROPEAN STANDARD

**EN 60079-14**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2003

ICS 29.260.20

Supersedes EN 60079-14:1997

English version

**Electrical apparatus for explosive gas atmospheres**  
**Part 14: Electrical installations in hazardous areas**  
**(other than mines)**  
(IEC 60079-14:2002)

Matériel électrique pour atmosphères  
explosives gazeuses  
Partie 14: Installations électriques  
dans les emplacements dangereux  
(autres que les mines)  
(CEI 60079-14:2002)

Elektrische Betriebsmittel für  
gasexplosionsgefährdete Bereiche  
Teil 14: Errichtung elektrischer Anlagen  
in explosionsgefährdeten Bereichen  
(ausgenommen Grubenbaue)  
(IEC 60079-14:2002)

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This European Standard was approved by CENELEC on 2003-07-01. 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.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and 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 the International Standard IEC 60079-14:2002, prepared by SC 31J, Classification of hazardous areas and installation requirements, of IEC TC 31, Electrical apparatus for explosive atmospheres, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60079-14 on 2003-07-01.

This European Standard supersedes EN 60079-14:1997.

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) 2004-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-07-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A and ZA are normative and annexes B and C are informative.

Annex ZA has been added by CENELEC.

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### Endorsement notice

The text of the International Standard IEC 60079-14:2002 was approved by CENELEC as a European Standard without any modification.

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**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE 1 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Where a standard cited below belongs to the EN 50000 series, this European Standard applies instead of the relevant International Standard.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60034-5	2000	Rotating electrical machines Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification	EN 60034-5	2001
IEC/TS 60034-17	2002	Part 17: Cage induction motors when fed from converters - Application guide	-	-
IEC 60050-426	1990	International Electrotechnical Vocabulary (IEV) Chapter 426: Electrical apparatus for explosive atmospheres	-	-
IEC 60060-1 + Corr. March	1989 1990	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 60079-0	1998	Electrical apparatus for explosive gas atmospheres Part 0: General requirements	-	-
IEC 60079-1	2001	Electrical apparatus for explosive gas atmospheres Part 1: Flameproof enclosures 'd'	-	-
IEC 60079-2	2001	Part 2: Pressurized enclosures 'p'	-	-
IEC 60079-5	1997	Part 5: Powder filling 'q'	EN 50017	1998
IEC 60079-6	1995	Part 6: Oil-immersion 'o'	EN 50015	1998
IEC 60079-7	2001	Part 7: Increased safety "e"	EN 60079-7	2003
IEC 60079-10	1995	Part 10: Classification of hazardous areas	EN 60079-10 <sup>1)</sup>	1996

<sup>1)</sup> EN 60079-10:1996 is superseded by EN 60079-10:2003, which is based on IEC 60079-10:2002.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-11	1999	Part 11: Intrinsic safety "i"	EN 50020	2002
IEC 60079-13	1982	Part 13: Construction and use of rooms or buildings protected by pressurization	-	-
IEC 60079-15	2001	Part 15: Type of protection "n"	-	-
IEC 60079-16	1990	Part 16: Artificial ventilation for the protection of analyser(s) houses	-	-
IEC 60079-17	1996	Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines)	EN 60079-17 2)	1997
IEC 60079-18	1992	Part 18: Encapsulation "m"	-	-
IEC 60079-19	1993	Part 19: Repair and overhaul for apparatus used in explosive atmospheres (other than mines or explosives)	-	-
IEC 60332-1	1993	Tests on electric cables under fire conditions	EN 50265-1 EN 50265-2-1	1998 1998
IEC 60364-4-41 (mod)	2001	Electrical installations of buildings Part 4: Protection for safety -- Chapter 41: Protection against electric shock	HD 384.4.41 S2	1996
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 60614-2-1	1982	Specification for conduits for electrical installations Part 2: Particular specifications for conduits -- Section 1: Metal conduits	-	-
IEC 60614-2-5	1992	Part 2: Particular specifications for conduits -- Section 5: Flexible conduits	-	-
IEC 60742 (mod)	1983	Isolating transformers and safety isolating transformers - Requirements	EN 60742 3)	1995
IEC 61024-1	1990	Protection of structures against lightning Part 1: General principles	-	-

2) EN 60079-17:1997 is superseded by EN 60079-17:2003, which is based on IEC 60079-17:2002.

3) EN 60742 includes A1:1992 to IEC 60742:1983.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61024-1-1	1993	Part 1: General principles Section 1: Guide A: Selection of protection levels for lightning protection systems	-	-
IEC 61285 + corr. October	1994 1994	Industrial-process control - Safety of analyzer houses	EN 61285	1994
ISO 10807	1994	Pipework - Corrugated flexible metallic hose assemblies for the protection of electric cables in explosive atmospheres	EN ISO 10807	1996

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INTERNATIONALE  
INTERNATIONAL  
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**CEI  
IEC**

**60079-14**

Troisième édition  
Third edition  
2002-10

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**Matériel électrique pour atmosphères  
explosives gazeuses –**

**Partie 14:  
Installations électriques dans les emplacements  
dangereux (autres que les mines)**

**Electrical apparatus for explosive  
gas atmospheres –**

**Part 14:  
Electrical installations in hazardous areas  
(other than mines)**

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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For price, see current catalogue*

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES –

Part 14: Electrical installations in hazardous areas  
(other than mines)

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 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.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 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.

International Standard IEC 60079-14 has been prepared by subcommittee 31J: Classification of hazardous areas and installation requirements, of IEC technical committee 31: Electrical apparatus for explosive atmospheres.

This third edition cancels and replaces the second edition published in 1996, and constitutes a technical revision.

## iTeh STANDARD PREVIEW

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

FDIS	Report on voting
31J/86/FDIS	31J/87/RVD

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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 publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

This standard is to be read in conjunction with IEC 60079-0 and with the standards for the specific types of protection listed in the scope.

Annex A forms an integral part of this standard.

Annexes B and C are for information only.

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

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

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## INTRODUCTION

When electrical apparatus is to be installed in areas where dangerous concentrations and quantities of flammable gases, vapours, mists, ignitable fibres or dusts may be present in the atmosphere, protective measures are applied to reduce the likelihood of explosion due to ignition by arcs, sparks or hot surfaces, produced either in normal operation or under specified fault conditions.

This part of IEC 60079 is supplementary to other relevant IEC standards, for example IEC 60364 as regards electrical installation requirements, and also refers to IEC 60079-0 and its associated standards for the construction, testing and marking requirements of suitable electrical apparatus.

By careful design of the electrical installation, it is frequently possible to locate much of the electrical apparatus in less hazardous or non-hazardous areas.

For an explosion to occur, an explosive atmosphere and a source of ignition need to co-exist. Protective measures aim to reduce to an acceptable level the likelihood that the electrical installation could become a source of ignition.

It has been found practical to classify hazardous areas into zones according to the likelihood of an explosive gas atmosphere being present (see IEC 60079-10). Such classification allows appropriate types of protection to be specified for each zone.

Several types of protection are now available for electrical apparatus in hazardous areas (see IEC 60079-0), and this standard gives the specific requirements for design, selection and erection of electrical installations in explosive gas atmospheres.

This standard is based on the assumption that electrical apparatus is correctly installed, tested, maintained and used in accordance with its specified characteristics.

Inspection, maintenance and repair aspects also form an important part of hazardous area installations and the user's attention is drawn to IEC 60079-17 and IEC 60079-19 for further information concerning these aspects.

In any industrial installation, irrespective of size, there may be numerous sources of ignition apart from those associated with electrical apparatus. Precautions may be necessary to ensure safety, but guidance on this aspect is outside the scope of this standard.

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