
Električne naprave za eksplozivne plinske atmosfere – 15. del: Konstrukcija, preskušanje in označevanje električnih naprav v vrsti protieksplzijske zaščite "n" (IEC 60079-15:2005)

Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus (IEC 60079-15:2005)

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Electrical apparatus for explosive gas atmospheres
Part 15: Construction, test and marking of type of protection "n"
electrical apparatus
(IEC 60079-15:2005)

Matériel électrique pour atmosphères
explosives gazeuses
Partie 15: Construction, essais et
marquage des matériels électriques
du mode de protection "n"
(CEI 60079-15:2005)

Elektrische Betriebsmittel für
gasexplosionsgefährdete Bereiche
Teil 15: Konstruktion, Prüfung
und Kennzeichnung von elektrischen
Betriebsmitteln der Zündschutzart "n"
(IEC 60079-15:2005)

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This European Standard was approved by CENELEC on 2005-06-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 document 31/558/FDIS, future edition 3 of IEC 60079-15, prepared by IEC TC 31, Electrical apparatus for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60079-15 on 2005-06-01.

This European Standard is to be read in conjunction with EN 60079-0.

This European Standard supersedes EN 60079-15:2003.

The significant technical changes with respect to EN 60079-15:2003 are as follows:

- linking the standard to EN 60079-0 and adding Table 1 to show the connections;
- references to third party testing stations removed;
- adding the definition of associated energy limiting apparatus [nL] and [Ex nL];
- definitions eliminated that also appear in EN 60079-0;
- elimination of n-pressurization, all pressurization requirements now covered by EN 60079-2;
- air gap spark test requirement added for motors over 100 kW;
- added risk assessment tables for motors over 1 kV and over 100 kW;
- requirements changed for motors operating with frequency converters;
- references to other IEC and European standards updated for luminaires;
- caplights and handlights addressed by reference to EN 60079-0;
- creepage and clearance requirements for low powered apparatus between 60 V a.c. up to 250 V a.c. added in Table 10;
- requirement for plugs and sockets to maintain the degree of protection expanded;
- cable clamping test eliminated;
- insertion and removal torque values for E40/E39 lamp caps adjusted downward;
- high-voltage impulse test for ballasts eliminated;
- changes made to test and acceptance criteria in luminaire starter and ignitor tests;
- ignition tests for large or high-voltage machines added;
- marking and documentation sections changed to reflect changes elsewhere in the standard;
- manufacturer's responsibility section dropped and replaced with instructions section.

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) 2006-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2008-06-01

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.

Endorsement notice

The text of the International Standard IEC 60079-15:2005 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 60034-17	NOTE	Harmonized as CLC/TS 60034-17:2004 (not modified).
IEC 60068-2-6	NOTE	Harmonized as EN 60068-2-6:1995 (not modified).
IEC 60079-18	NOTE	Harmonized as EN 60079-18:2004 (not modified).
IEC 60297	NOTE	Harmonized in the HD 493 and EN 60297 series (not modified).

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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 Where 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>
		Cable glands for electrical installations	EN 50262	– ¹⁾
IEC 60034	Series	Rotating electrical machines	EN 60034	Series
IEC 60034-1	– ¹⁾	Part 1: Rating and performance	EN 60034-1	2004 ²⁾
IEC 60034-5	– ¹⁾	Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - Classification	EN 60034-5	2001 ²⁾
IEC 60034-7	– ¹⁾	Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code)	EN 60034-7	1993 ²⁾
IEC/TS 60034-25	– ¹⁾	Part 25: Guide for the design and performance of cage induction motors specifically designed for converter supply	CLC/TS 60034-25	2005 ²⁾
IEC 60061 (mod)	Series	Lamp caps and holders together with gauges for the control of interchangeability and safety	EN 60061	Series
IEC 60068-2-27	1987	Basic environmental testing procedures Part 2: Tests - Test Ea and guidance: Shock	EN 60068-2-27	1993
IEC 60079-0 (mod)	2004	Electrical apparatus for explosive gas atmospheres Part 0: General requirements	EN 60079-0	2004
IEC 60079-1	– ¹⁾	Electrical apparatus for explosive gas atmospheres Part 1: Flameproof enclosures 'd'	EN 60079-1 + corr. March	2004 ²⁾ 2004
IEC 60079-11	1999	Part 11: Intrinsic safety "i"	-	-
IEC 60079-17	– ¹⁾	Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines)	EN 60079-17	2003 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 60081	– ¹⁾	Double-capped fluorescent lamps - Performance specifications	EN 60081	1998 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 60155	– ¹⁾	Glow-starters for fluorescent lamps	EN 60155	1995 ²⁾
IEC 60238	1998	Edison screw lampholders	EN 60238	1998 ³⁾
IEC 60269-3	– ¹⁾	Low-voltage fuses Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications)	EN 60269-3	1995 ²⁾
IEC 60400 (mod)	– ¹⁾	Lampholders for tubular fluorescent lamps and starterholders	EN 60400	2000 ²⁾
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 60598-1 (mod)	1996	Luminaires Part 1: General requirements and tests	EN 60598-1	1997 ⁴⁾
IEC 60598-2 (mod)	Series	Part 2: Particular requirements	EN 60598-2	Series
IEC 60664-1	– ¹⁾	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	EN 60664-1	2003 ²⁾
IEC 60927	1996	Auxiliaries for lamps - Starting devices (other than glow starters) - Performance requirements	EN 60927	1996
IEC 60998-2-4	1993	Connecting devices for low-voltage circuits for household and similar purposes Part 2-4: Particular requirements for twist-on connecting devices	EN 60998-2-4	1993 ⁵⁾
IEC 61048 (mod)	– ¹⁾	Auxiliaries for lamps - Capacitors for use in tubular fluorescent and other discharge lamp circuits - General and safety requirements	EN 61048 + corr. December	1993 ²⁾ 1998
IEC 61184	– ¹⁾	Bayonet lampholders	EN 61184	1997 ²⁾
IEC 61347-1	– ¹⁾	Lamp controlgear Part 1: General and safety requirements	EN 61347-1	2001 ²⁾

³⁾ EN 60238 is superseded by EN 60238:2004 (+ corrigendum January 2005) which is based on IEC 60238:2004.

⁴⁾ EN 60598-1 is superseded by EN 60598-1:2004, which is based on IEC 60598-1:2003 (modified).

⁵⁾ EN 60998-2-4 is superseded by EN 60998-2-4:2005, which is based on IEC 60998-2-4:2004 (modified).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61347-2-1	– ¹⁾	Part 2-1: Particular requirements for starting devices (other than glow starters)	EN 61347-2-1	2001 ²⁾
IEC 61347-2-2	– ¹⁾	Part 2-2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps	EN 61347-2-2	2001 ²⁾
IEC 61347-2-3	– ¹⁾	Part 2-3: Particular requirements for a.c. supplied electronic ballasts for fluorescent lamps	EN 61347-2-3	2001 ²⁾
IEC 61347-2-4	– ¹⁾	Part 2-4: Particular requirements for d.c. supplied electronic ballasts for general lighting	EN 61347-2-4	2001 ²⁾
IEC 61347-2-7	– ¹⁾	Part 2-7: Particular requirements for d.c. supplied electronic ballasts for emergency lighting	EN 61347-2-7	2001 ²⁾
IEC 61347-2-8	– ¹⁾	Part 2-8: Particular requirements for ballasts for fluorescent lamps	EN 61347-2-8	2001 ²⁾
IEC 61347-2-9	– ¹⁾	Part 2-9: Particular requirements for ballasts for discharge lamps (excluding fluorescent lamps)	EN 61347-2-9	2001 ²⁾

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Annex ZZ (informative)

Coverage of essential requirements of the Directive

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 safety requirements out of those given in Annex II of the EC Directive 94/9/EC:

- ER 1.0.1, ER 1.0.2 (partly), ER 1.0.4 (partly), 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 1.2.6, ER 1.2.9
- ER 1.3.1 (partly), ER 1.3.4 (partly)
- ER 1.5.1
- ER 1.6.4 (partly)
- ER 2.3.1

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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**Matériel électrique pour atmosphères explosives
gazeuses –**

**Partie 15:
Construction, essais et marquage des matériels
électriques du mode de protection «n»**

**Electrical apparatus for explosive gas
atmospheres –**

**Part 15:
Construction, test and marking of type of
protection "n" electrical apparatus**

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