

INTERNATIONAL STANDARD

IEC 60079-7

Third edition
2001-11

**Electrical apparatus for explosive
gas atmospheres –**

**Part 7:
Increased safety "e"**

*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL APPARATUS FOR EXPLOSIVE
GAS ATMOSPHERES –**

Part 7: Increased safety "e"

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.
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International Standard IEC 60079-7 has been prepared by IEC technical committee 31: Electrical apparatus for explosive atmospheres.

This third edition cancels and replaces the second edition published in 1990, its amendment 1 (1991) and amendment 2 (1993). This third edition constitutes a technical revision.

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

FDIS	Report on voting
31/381/FDIS	31/388/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.

Annexes A and B form an integral part of this standard.

Annexes C, D, E and F are given for information only.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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- withdrawn;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

ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES –

Part 7: Increased safety "e"

1 Scope

This part of IEC 60079 specifies the requirements for the design, construction, testing and marking of electrical apparatus with type of protection increased safety "e" intended for use in explosive gas atmospheres. This standard applies to electrical apparatus with a rated value of supply voltage not exceeding 11 kV r.m.s. a.c. or d.c. Additional measures are applied to ensure that the apparatus does not produce arcs, sparks, or excessive temperatures in normal operation or under specified abnormal conditions.

These specific requirements are additional to the general requirements in IEC 60079-0 that apply to type of protection increased safety "e" unless specifically excluded.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60079. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60079 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60034-1, *Rotating electrical machines – Part 1: Rating and performance*

IEC 60034-5, *Rotating electrical machines – Part 5: Degrees of protection provided by internal design of rotating electrical machines (IP code) – Classification*

IEC 60044-6, *Instrument transformers – Part 6: Requirements for protective current transformers for transient performance*

IEC 60050(426), *International Electrotechnical Vocabulary (IEV) – Chapter 426: Electrical apparatus for explosive atmospheres*

IEC 60050(486), *International Electrotechnical Vocabulary (IEV) – Chapter 486: Secondary cells and batteries*

IEC 60061-1, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 1: Lamp caps*

IEC 60061-2, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 2: Lampholders*

IEC 60064, *Tungsten filament lamps for domestic and similar general lighting purposes – Performance requirements*

IEC 60068-2-6, *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-27, *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*
IEC 60068-2-42, *Basic environmental testing procedures – Part 2: Tests – Test Kc: Sulphur dioxide test for contacts and connections*

IEC 60068-2-42, *Environmental testing – Part 2: Tests – Test Kc: Sulphur dioxide test for contacts and connections*

IEC 60079-0:1998, *Electrical apparatus for explosive gas atmospheres – Part 0: General requirements*¹

IEC 60079-1, *Electrical apparatus for explosive gas atmospheres – Part 1: Flameproof enclosures "d"*

IEC 60079-4, *Electrical apparatus for explosive gas atmospheres – Part 4: Method of test for ignition temperature*

IEC 60079-11, *Electrical apparatus for explosive gas atmospheres – Part 11: Intrinsic safety 'i'*

IEC 60079-17, *Electrical apparatus for explosive gas atmospheres – Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines)*

IEC 60085, *Thermal evaluation and classification of electrical insulation*

IEC 60112, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions*

IEC 60238, *Edison screw lampholders*

IEC 60317-3, *Specifications for particular types of winding wires – Part 3: Polyester enamelled round copper wires, class 155*

IEC 60317-7, *Specifications for particular types of winding wires – Part 7: Polyamide enamelled round copper wire, class 220*

IEC 60317-8, *Specifications for particular types of winding wires – Part 8: Polyesterimide enamelled round copper winding wire, class 180*

IEC 60317-13, *Specifications for particular types of winding wires – Part 13: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200*

IEC 60364-3, *Electrical installations of buildings – Part 3: Assessment of general characteristics*

IEC 60400, *Lampholders for tubular fluorescent lamps and starterholders*

¹ A consolidated edition exists 1.1 (2000) that includes IEC 60079-0 (1998) and its amendment 1 (2000)

IEC 60432-1, *Incandescent lamps – Safety specifications – Part 1: Tungsten filament lamps for domestic and similar general lighting purposes*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements, and tests*²

IEC 60947-1, *Low-voltage switchgear and controlgear, Part 1 – General rules*

IEC 60947-7-1, *Low-voltage switchgear and controlgear, Part 7 – Ancillary equipment – Section 1: Terminal blocks for copper conductors*

IEC 60999-1, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm² up to 35 mm²*

IEC 60999-2, *Connecting devices – Safety requirements for screw-type and screwless-type clamping units for electrical copper connectors – Part 2: Particular requirements for conductors from 35 mm² up to 300 mm²*

IEC 61195, *Double-capped fluorescent lamps – Safety specifications*

IEC 62086-1, *Electrical apparatus for explosive gas atmospheres – Electrical resistance trace heating – Part 1: General and testing requirements*

² A consolidated edition exists 1.1 (2000) that includes IEC 60664-1 (1992) and its amendment 1 (2000)