BRITISH STANDARD

BS EN
60079-15:2005

Electrical apparatus for explosive gas atmospheres —

Part 15: Construction, test and marking of type of protection “n” electrical apparatus

The European Standard EN 60079-15:2005 has the status of a British Standard

ICS 29.260.20

BSI
British Standards

National foreword

This British Standard is the official English language version of EN 60079-15:2005. It is identical with IEC 60079-15:2005. It supersedes BS 6941:1988 which is withdrawn, BS EN 50021:1999 which will remain current until 1 July 2006 then it will be declared obsolescent until 1 June 2008 when it will be withdrawn, and BS EN 60079-15:2003 which will remain current until 1 June 2008 then it will be declared obsolescent.

Technical Committee GEL/31 asks users of this standard to note that requirements for large rotating electrical machines are still developing across a range of standards. At the time of publication of this standard, a draft for a future revision of IEC 60079-7 (eventually to be published as BS EN 60079-7) contains a revised table of parameters which may reduce the need for testing complete machines in the presence of gas to prove the absence of dangerous rotor sparking. It will be inconsistent for the requirements for Ex n in this standard to be more restrictive than the requirements for Ex e in that standard and users of this standard may wish to refer to the next edition of BS EN 60079-7 when it is published — probably in 2006.

The UK participation in its preparation was entrusted by Technical Committee GEL/31, Electrical apparatus for explosive atmospheres, to Subcommittee GEL/31/14, Type of protection “e” and “N”, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 83 and a back cover.

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Amendments issued since publication

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EUROPEAN STANDARD **EN 60079-15**

NORME EUROPÉENNE

EUROPÄISCHE NORM October 2005

ICS 29.260.20 Supersedes EN 60079-15:2003

English version

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)

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

Ref. No. EN 60079-15:2005 E

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.

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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).

CONTENTS

ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES –

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

1 Scope

This part of IEC 60079 specifies requirements for the construction, testing and marking for Group II electrical apparatus with type of protection, "n" intended for use in explosive gas atmospheres.

This part is applicable to non-sparking electrical apparatus and also to electrical apparatus with parts or circuits producing arcs or sparks or having hot surfaces which, if not protected in one of the ways specified in this standard, could be capable of igniting a surrounding explosive gas atmosphere. This standard describes several different methods by which this can be achieved which may be combined with other methods described in IEC 60079-0.

This part supplements the general requirements in IEC 60079-0. The relationship of IEC 60079-0 to this part is as indicated in Table 1.

Table 1 – Relationship of this part to IEC 60079-0

Clause of IEC 60079-0		IEC 60079-0 clause application to IEC 60079-15				
		Type of protection nC	Non sparking apparatus nA and nA nL	Restricted breathing apparatus nR	Energy limited apparatus nL	Associated energy limited apparatus [nL] and [Ex nL]
4	Apparatus grouping and temperature classification	Yes	Yes	Yes	Yes	Yes
5	Temperatures					
5.1	Environmental influences	Yes	Yes	Yes	Yes	Yes
5.2	Service temperature	Yes	Yes	Yes	Yes	Yes
5.3	Maximum surface temperature	Yes	Yes	Yes	Yes	No
5.4	Surface temperature and ignition temperature	No	No	No	No	No
5.5	Small components	Yes	Yes	Yes	Yes	No
6	Requirements for all electrical apparatus					
6.1	General	Yes	Yes	Yes	Yes	Yes
6.2	Mechanical strength of apparatus	Yes	Yes	Yes	Yes [c)]	No
6.3	Opening times	No	No	Yes	No	No
6.4	Circulating currents	Yes	Yes	Yes	No	No
6.5	Gasket retention	Yes	Yes	Yes	Yes	No