SLOVENSKI STANDARD
SIST EN 60079-29-1:2008

01-september-2008

Eksplozivne atmosfere - 29-1. del: Javljalniki plina - Zahteve za delovanje javljalnikov vnetljivih plinov (IEC 60079-29-1:2007, spremenjen)

Explosive atmospheres -- Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases

Explosionsfähige Atmosphäre -- Teil 29-1: Gasmessgeräte - Anforderungen an das Betriebsverhalten von Geräten für die Messung brennbarer Gase

Atmosphères explosives -- Partie 29-1: Détecteurs de gaz - Exigences d'aptitude à la fonction des détecteurs de gaz inflammables

Ta slovenski standard je istoveten z: **EN 60079-29-1:2007**

ICS:

13.320	Alarmni in opozorilni sistemi	Alarm and warning systems
29.260.20	Električni aparati za eksplozivna ozračja	Electrical apparatus for explosive atmospheres

SIST EN 60079-29-1:2008 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60079-29-1

November 2007

ICS 29.260.20

Supersedes EN 61779-1:2000 + A11:2004, EN 61779-2:2000, EN 61779-3:2000, EN 61779-4:2000, EN 61779-5:2000

English version

Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases

(IEC 60079-29-1:2007, modified)

Atmosphères explosives - Partie 29-1: Détecteurs de gaz - Exigences d'aptitude à la fonction des détecteurs de gaz inflammables (CEI 60079-29-1:2007, modifiée)

Explosionsfähige Atmosphäre - Teil 29-1: Gasmessgeräte - Anforderungen an das Betriebsverhalten von Geräten für die Messung brennbarer Gase (IEC 60079-29-1:2007, modifiziert)

This European Standard was approved by CENELEC on 2007-11-01. 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.

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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 60079-29-1:2007 E

Foreword

The text of document 31/695/FDIS, future edition 1 of IEC 60079-29-1, prepared by IEC TC 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote.

A draft amendment, prepared by SC 31-9, Electrical apparatus for the detection and measurement of combustible gases to be used in industrial and commercial potentially explosive atmospheres, of Technical Committee CENELEC TC 31, Electrical apparatus for explosive atmospheres, containing common modifications to document 31/695/FDIS was submitted to the formal vote.

The combined texts of document 31/695/FDIS and the draft amendment prAA were approved by CENELEC as EN 60079-29-1 on 2007-11-01.

This European Standard supersedes EN 61779-1:2000 + A11:2004, EN 61779-2:2000, EN 61779-3:2000, EN 61779-4:2000 and EN 61779-5:2000.

The main changes with respect to the EN 61779 series are listed below:

– Subclause 4.2.3 (Alarm or output functions) was modified to ensure alarm devices cannot be adjustable outside their measuring range and to include requirements for de-activation of alarm devices;

– Subclause 4.2.7 (Stand-alone gas detection apparatus for use with separate control units) was added to allow separate evaluation of detection apparatus providing an industry recognized output signal;

– Subclause 4.2.8 (Separate control units for use with stand-alone gas detection apparatus) was added to allow separate evaluation of control unit apparatus using an industry recognized input signal;

– Subclause 4.2.9 (Software-controlled apparatus) was added to the document for improved evaluation of software. The added text is based upon the guiding principles and requirements of EN 50271;

– Subclause 5.2.1.1 was modified to require the center wavelength of the optical filters of two apparatus at the minimum and maximum limit of this standard;

– Subclause 5.2.1.2 was modified to allow the order of testing within each block to be conducted at the discretion of the test laboratory;

– Subclause 5.3.11 (Communications options) was added to ensure maximum transaction rates are applied during testing;

– Subclause 5.3.12 (Gas detection apparatus as part of systems) was added to ensure maximum transaction rates are applied during testing;

– Subclause 5.4.6 (Alarm set point(s)) was modified to include text related to alarms that are activated at decreasing concentrations;

– Subclause 5.4.10 (Air velocity) was modified to include testing at 3 m/s and 6 m/s;

– Subclause 5.4.16 (Time of response) was modified to exclude recovery time test requirements for Group II apparatus with a volume fraction up to 100 % LFL indication;

– Subclause 5.4.18 (High gas concentration operation above the measuring range) was modified to define the sequence of tests;

– Annex A (Performance requirements) has undergone major modifications by eliminating the gas/vapour table and replacing the annex with the performance requirements of Parts 2 to 5 of EN 61779. Additionally, performance requirements of Parts 2 to 5 of EN 61779 were adjusted for consistency as appropriate. The intent of this change is to condense Parts 1 to 5 of EN 61779 within a single standard.

This part of EN 60079-29 is to be used in conjunction with the following standards:

– EN 60079-0, Electrical apparatus for explosive gas atmospheres – Part 0: General requirements

– EN 60079-29-2, Explosive atmospheres – Part 29-2: Gas detectors – Selection, installation, use and maintenance of detectors for flammable gases and oxygen.

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)	2008-11-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-11-01

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 60079-29-1:2007 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

1 Scope

Delete NOTE 1 and **renumber** NOTE 2 to NOTE 4 as NOTE 1 to NOTE 3.

2 Normative references

Add the following undated references:

EN 50270, *Electromagnetic compatibility - Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen*

EN 50271, *Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen - Requirements and tests for apparatus using software and/or digital technologies*

Delete IEC 61000-4-1.

Delete IEC 61000-4-3.

Delete IEC 61000-4-4.

3 Terms and definitions

In the 1st paragraph **replace** "IEC 60079-0" with "EN 60079-0".

4 General requirements

4.1.2 At the end of the 1st paragraph **replace** "… in the other relevant parts of the IEC 60079 series." with "…in the appropriate regulations for explosion protection".

In the 2nd paragraph **replace** "… of these other parts of IEC 60079" with "… of the appropriate regulations for explosion protection".

4.1.3 **Replace** by "Void".

4.2.9 **Replace** Subclauses 4.2.9.1 to 4.2.9.6 by:

The apparatus shall fulfil the requirements of EN 50271.

4.3 In the 1st paragraph **replace** "IEC 60079-0" with "EN 60079-0".

Delete the NOTE.

4.4 In the NOTE between c) and d) **replace** "IEC 60079-29-2" with "EN 60079-29-2".

5 Test methods

5.4.21 Replace this subclause by:

5.4.21 Electromagnetic compatibility

The apparatus shall be set up under normal conditions, in accordance with 5.3, and then shall be subjected to the tests specified in EN 50270.

5.4.24.1 In the NOTE **replace** "IEC 60079-29-2" with "EN 60079-29-2".

5.4.25 Delete the whole subclause.

Table A.1 – Performance requirements

Replace the row referring to 5.4.21 by:

Subclause	Test	Group I apparatus limits (whichever value is greater)		Group II apparatus limits (whichever value is greater)	
		Volume fraction up to 5 % methane in air indication	Volume fraction up to 100 % methane in air indication	Volume fraction up to 100 % lower flammable limit indication	Volume fraction up to 100 % gas indication
5.4.21	Electromagnetic compatibility	According to EN 50270	According to EN 50270	According to EN 50270	According to EN 50270

Delete the row referring to 5.4.25.

Bibliography

Add the following notes for the standards indicated:

IEC 60068-2-6 NOTE Harmonized as EN 60068-2-6:1995 (not modified).

IEC 60079-1 NOTE Harmonized as EN 60079-1:2007 (not modified).

IEC 60079-2 NOTE Harmonized as EN 60079-2:2004 (not modified).

IEC 60079-6 NOTE Harmonized as EN 60079-6:2007 (not modified).

IEC 60079-7 NOTE Harmonized as EN 60079-7:2007 (not modified).

IEC 60079-10 NOTE Harmonized as EN 60079-10:2003 (not modified).

IEC 60079-11 NOTE Harmonized as EN 60079-11:2007 (not modified).

IEC 60079-15 NOTE Harmonized as EN 60079-15:2005 (not modified).

IEC 60079-18 NOTE Harmonized as EN 60079-18:2004 (not modified).

IEC 60079-25	NOTE	Harmonized as EN 60079-25:2004 (not modified).
IEC 60079-26	NOTE	Harmonized as EN 60079-26:2007 (not modified).
ISO 2738	NOTE	Harmonized as EN ISO 2738:1999 (not modified).
ISO 4003	NOTE	Harmonized as EN 24003:1993 (not modified).
ISO 4022	NOTE	Harmonized as EN ISO 4022:2006 (not modified).
ISO 6142	NOTE	Harmonized as EN ISO 6142:2006 (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.

Publication	Year	Title	EN/HD	Year
-	-	Electromagnetic compatibility - Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen	EN 50270	-[1)]
-	-	Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen - Requirements and tests for apparatus using software and/or digital technologies	EN 50271	-[1)]
IEC 60079-0 (mod)	-[1)]	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements	EN 60079-0	2006[2)]
IEC/TR 60079-20	-[1)]	Electrical apparatus for explosive gas atmospheres - Part 20: Data for flammable gases and vapours, relating to the use of electrical apparatus	-	-
IEC 60079-29-2	-[1)]	Explosive atmospheres - Part 29-2: Gas detectors - Selection, installation, use and maintenance of detectors for flammable gases and oxygen	EN 60079-29-2	2007[2)]

1) Undated reference.

2) Valid edition at date of issue.

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 1.5.5 to ER 1.5.7 – the essential safety requirements for devices with a measuring function for explosion protection;

– ER 1.5.8 – the risks arising from software.

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 can be applied to the products falling within the scope of this standard.

IEC 60079-29-1

Edition 1.0 2007-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Explosive atmospheres –
Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases

Atmosphères explosives –
Partie 29-1: Détecteurs de gaz – Exigences d'aptitude à la fonction des détecteurs de gaz inflammables

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPLOSIVE ATMOSPHERES –

Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases

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 60079-29-1 has been prepared by IEC technical committee 31: Equipment for explosive atmospheres.

This first edition of IEC 60079-29-1 cancels and replaces the first edition of IEC 61779-1 to IEC 61779-5:1998 series and constitutes a technical revision.

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

– Subclause 4.2.3 (Alarm or output functions) was modified to ensure alarm devices can not be adjustable outside their measuring range and to include requirements for de-activation of alarm devices.
– Subclause 4.2.7 (Stand-alone gas detection apparatus for use with separate control units) was added to allow separate evaluation of detection apparatus providing an industry recognized output signal.