

PLAHVATUSOHTLIKUD KESKKONNAD. OSA 29-1:
GAASIDETEKTORID. PÕLEVGAASIDETEKTORITE
TOIMIVUSNÕUDED

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 60079-29-1:2016 sisaldab Euroopa standardi EN 60079-29-1:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 60079-29-1:2016 consists of the English text of the European standard EN 60079-29-1:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.12.2016.	Date of Availability of the European standard is 23.12.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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English Version

**Explosive atmospheres - Part 29-1: Gas detectors - Performance
requirements of detectors for flammable gases
(IEC 60079-29-1:2016 , modified)**

Atmosphères explosives - Partie 29-1: Détecteurs de gaz -
Exigences d'aptitude à la fonction des détecteurs de gaz
inflammables
(IEC 60079-29-1:2016 , modifiée)

Explosionsfähige Atmosphäre - Teil 29-1: Gasmessgeräte -
Anforderungen an das Betriebsverhalten von Geräten für
die Messung brennbarer Gase
(IEC 60079-29-1:2016 , modifiziert)

This European Standard was approved by CENELEC on 2016-09-19. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

The text of document 31/1257/FDIS, future edition 2 of IEC 60079-29-1, prepared by IEC/TC 31 "Equipment for explosive atmospheres" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60079-29-1:2016.

A draft amendment, which covers common modifications to IEC 60079-29-1 (31/1257/FDIS), was 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 CLC/TC 31 "Electrical apparatus for potentially explosive atmospheres" and approved by CENELEC.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-06-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-12-23

This document supersedes EN 60079-29-1:2007.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60079-29-1:2016 are prefixed "Z".

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For the relationship with EU Directive see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 60079-29-1:2016 was approved by CENELEC as a European Standard with agreed common modifications.

COMMON MODIFICATIONS

Introduction

Replace "IEC 60079-29" by "EN 60079-29".

Replace "IEC 60079-29-2" by "EN 60079-29-2".

Replace "IEC 60079-29-3" by "EN 60079-29-3".

Replace "IEC 60079-29-4" by "EN 60079-29-4".

1 Scope

Replace "IEC 60079-29" by "EN 60079-29" (7 times).

Replace "IEC 60079-29-4" by "EN 60079-29-4".

Replace "IEC 60079-0" by "EN 60079-0" (twice).

Replace "IEC 60079-29-1" by "EN 60079-29-1" (twice).

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

2 Normative references

Add the following 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*

Replace "IEC 60079-0" by "EN 60079-0".

Replace "IEC 60068-2-6" by "EN 60068-2-6".

Replace "IEC 60079-20-1" by "EN 60079-20-1".

Delete IEC 61326-1:2012.

3 Terms and definitions

*In the first paragraph, **replace** "IEC 60079-0" by "EN 60079-0".*

*In 3.1.3, **replace** "IEC 60079-29" by "EN 60079-29" (twice).*

*In 3.1.4, **replace** NOTE 1 by the following:*

"Note 1 to entry: This is also known as lower explosive limit (LEL)."

*In 3.1.6, **replace** NOTE 1 by the following:*

"Note 1 to entry: This is also known as upper explosive limit (UEL)."

4 General requirements

*In 4.1.1, **replace** "IEC 60079-29" by "EN 60079-29".*

*In 4.1.2, at the end of the first paragraph, **replace** "... in the other relevant parts of the IEC 60079 series" by "...in the appropriate regulations for explosion protection".*

***Replace** the whole subclause 4.2.9 up to 4.2.9.7 included by the following:*

"4.2.9 Apparatus using software and/or digital technologies

The equipment shall fulfil the requirements of EN 50271.

Software-controlled accessories shall be included where related to safety."

*In 4.3, **replace** "IEC 60079-0" by "EN 60079-0" (once) and "IEC 60079-29-1" by "EN 60079-29-1" (twice).*

*In 4.4, list item c) 5), **replace** "IEC 60079-29-2" by "EN 60079-29-2".*

*In 4.4, list item f), **replace** "IEC 60079-20-1" by "EN 60079-20-1".*

*In 4.4, list item q), **replace** "IEC 60529" by "EN 60529".*

5 Test methods

*In 5.2.1, **replace** "IEC 60079-20-1" by "EN 60079-20-1".*

*In 5.4.12.1 and in 5.4.12.2.1, **replace** "IEC 60068-2-6" by "EN 60068-2-6".*

*In 5.4.20.2, NOTE 2, **replace** "IEC 60079-29-2" by "EN 60079-29-2".*

Replace the whole subclause 5.4.21 by the following:

"5.4.21 Electromagnetic compatibility

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

Replace the whole subclause 5.4.23 by the following:

"5.4.23 Verification of software and digital components

Design and function of the equipment using software and/or digital technologies shall be evaluated and tested in accordance with EN 50271."

Annexes

In Table A.1 – Performance requirements, **replace** the row referring to 5.4.21 by:

Sub-clause	Test	Group I equipment limits (whichever value is greater)		Group II equipment 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 20 % lower flammable limit 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	According to EN 50270

Add the following annexes.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
-	-	Electromagnetic compatibility - Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen	EN 50270	-
-	-	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	-
IEC 60050-426	-	International Electrotechnical Vocabulary - Part 426: Equipment for explosive atmospheres	-	-
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60079-0	-	Explosive atmospheres - Part 0: Equipment - General requirements	EN 60079-0	-
IEC 60079-20-1	-	Explosive atmospheres - Part 20-1: Material characteristics for gas and vapour classification - Test methods and data	EN 60079-20-1	-

Annex ZZ

(informative)

Relationship between this European Standard and the essential requirements of Directive 2014/34/EU [2014 OJ L96] aimed to be covered

This European Standard has been prepared under a Commission's standardization request [Full reference to the request "M/xxx" ¹⁾ to provide one voluntary means of conforming to essential requirements of *Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres* [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZZ.1 – Correspondence between this European Standard and Annex II of Directive 2014/34/EU [2014 OJ L96]

Essential Requirements of Directive 2014/34/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
1.5.5 - 1.5.7	whole standard except 4.2.9 and 5.4.23	
1.5.8	4.2.9, 5.4.23	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

¹⁾ Mandate not yet available.