



SLOVENSKI STANDARD
SIST EN 60079-29-4:2010
01-junij-2010

**Eksplozivne atmosfere - 29-4. del: Javljalniki plina - Zahteve za delovanje
javljalnikov vnetljivih plinov z odprto merilno potjo (IEC 60079-29-4:2009)**

Explosive atmospheres - Part 29-4: Gas detectors - Performance requirements of open path detectors for flammable gases n(IEC 60079-29-4:2009)

Explosionsfähige Atmosphäre - Teil 29-4: Gasmessgeräte - Anforderungen an das Betriebsverhalten von Geräten mit offener Messstrecke für die Messung brennbarer Gase (IEC 60079-29-4:2009)

Atmosphères explosives - Partie 29-4: Détecteurs de gaz - Exigences d'aptitude à la fonction des détecteurs de gaz inflammables à chemin ouvert (CEI 60079-29-4:2009)

Ta slovenski standard je istoveten z: EN 60079-29-4:2010

ICS:

29.260.20	Električni aparati za eksplozivna ozračja	Electrical apparatus for explosive atmospheres
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60079-29-4

April 2010

ICS 29.260.20

Supersedes EN 50241-1:1999 + A1:2004, EN 50241-2:1999

English version

**Explosive atmospheres -
Part 29-4: Gas detectors -
Performance requirements of open path detectors for flammable gases
(IEC 60079-29-4:2009)**

Atmosphères explosives -
Partie 29-4: Détecteurs de gaz -
Exigences d'aptitude à la fonction
des détecteurs de gaz inflammables
à chemin ouvert
(CEI 60079-29-4:2009)

Explosionsfähige Atmosphäre -
Teil 29-4: Gasmessgeräte -
Anforderungen an das Betriebsverhalten
von Geräten mit offener Messstrecke
für die Messung brennbarer Gase
(IEC 60079-29-4:2009)

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This European Standard was approved by CENELEC on 2010-04-01. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 31/819/FDIS, future edition 1 of IEC 60079-29-4, prepared by IEC Technical Committee 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote.

A draft amendment, prepared by the CENELEC 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 potentially explosive atmospheres, was submitted to the formal vote.

The combined texts were approved by CENELEC as EN 60079-29-4 on 2010-04-01.

EN 60079-29-4:2010 supplements and modifies the general requirements of EN 60079-0. Where a requirement of this standard conflicts with a requirement of EN 60079-0, the requirement of this standard shall take precedence.

This European Standard supersedes EN 50241-1:1999 + A1:2004 and EN 50241-2:1999.

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

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2011-01-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2013-04-01

Annexes ZA, ZZ and ZY have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60079-29-4:2009 was approved by CENELEC as a European Standard with agreed common modifications as given below.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

ISO 6142	NOTE Harmonized as EN ISO 6142
ISO 6144	NOTE Harmonized as EN ISO 6144
ISO 6145	NOTE Harmonized as EN ISO 6145

COMMON MODIFICATIONS

1 Scope

Replace “IEC 60079-29” with “EN 60079-29” in paragraph 1.

Replace “IEC 60079-29-1” with “EN 60079-29-1” in Note 1.

Delete note 3.

2 Normative references

Replace “IEC 60079 (all parts)” with “EN 60079 (all parts)” in paragraph 2.

Replace “IEC 60079-0” with “EN 60079-0” in paragraph 3.

Replace “IEC 60079-29-1” with “EN 60079-29-1” in paragraph 4.

Delete references to IEC 61000-4-1 and IEC 61000-4-3 in paragraphs 6 and 7.

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*

3 Terms and definitions

In the 1st paragraph:

Replace “IEC 60079-0” with “EN 60079-0”.

Replace “IEC 60079-29-1” with “EN 60079-29-1”.

4 General requirements

4.1.1

In the 2nd paragraph, line 2, **replace** “... of these other parts of IEC 60079” with “... of the appropriate regulations for explosion protection”.

4.3

Add “The apparatus shall fulfil the requirements of EN 50271.”

Delete subclauses 4.3.1 to 4.3.5.

5 Test methods

5.2.4.2

In the second paragraph, **replace** reference to test 5.4.16 by 5.4.20.

5.4.12

In the 3rd paragraph, **replace** “A 90% of the change.....” with “90% of the change.....”.

5.4.15 Power supply interruptions and transients

Replace 5.4.15.1, 5.4.15.2 and 5.4.15.3 with “Text deleted”.

5.4.17

Replace this subclause by:

5.4.17 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.

NOTE For this test the operating distance may be relaxed to suit the requirements of the EMC test facility.”

7.1 Labelling and marking

Delete the text and replace with:

“The equipment shall **comply with the marking requirements of EN 60079-0**.”

In addition, the equipment shall also be marked:

- a) “EN 60079-29-4” (to represent conformance with this performance standard);
- b) year of construction (may be encoded within the serial number).”

7.2 Instruction manual

Add “EN” before “60079-0” in paragraph 1, line 2.

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.

<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 60079	Series	Explosive atmospheres	EN 60079	Series
IEC 60079-0	-	Explosive atmospheres - Part 0: Equipment - General requirements	EN 60079-0	-
IEC 60079-29-1 (mod)	-	Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases	EN 60079-29-1	-
IEC 60825-1	-	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	-

Annex ZY (informative)

Significant changes between this European Standard and EN 50241-1:1999 and EN 50241-2:1999

This European Standard supersedes EN 50241-1:1999 and EN 50241-2:1999.

The significant changes with respect to EN 50241-1:1999 and EN 50241-2:1999 are as listed below.

	Type		
	Minor and editorial changes	Extension	Substantial change regarding ESR's ^a
Normative references: EN 60068-2-6 (vibration), removed, EN 50271 (software) added	X		
Definitions: 3 modified, 3 added, 2 removed	X		
General requirements 4.1 and 4.1.1 modified, 4.1.5 replaced by 4.3 (Software-controlled equipment, new), 4.2.2.4 (low battery indications) replaced within 4.2.4 (Fault signals, new)	X		
General requirements and normal conditions for tests modified and extended (clauses 5.1, 5.2.4.1, 5.2.4.2, 5.3.2, 5.3.3, 5.3.7, 5.3.8, 5.3.11, 5.3.12)	X		
Test method 5.4.2 (Unpowered storage) modified	X		
Test method 5.4.3 (Calibration curve) modified		X	X
Test method 5.4.4.1, 'Short term drift' test removed, replaced with 'Slow increase of gas volume ratio' for equipment with automatic drift compensation		X	X
Test method 5.4.4.2 (Long term stability) modified	X		
Test method 5.4.4.3, Long term stability (continuous duty, battery powered) test added		X	X
Test method 5.4.4.4, Stability (spot reading equipment only) test added		X	X
Test method 5.4.6 (Temperature variation) modified	X		
Requirements for test 5.4.6 modified	X		
Test method 5.4.7 removed (Pressure variation)	X		
Test method 5.4.7 (Water vapour interference) modified	X		
Requirements for test 5.4.7 modified	X		
Test method 5.4.8 (Vibration) modified	X		
Requirements for test 5.4.8 modified	X		
Test method 5.4.9, Drop test for portable and transportable equipment added		X	X

	Type		
	Minor and editorial changes	Extension	Substantial change regarding ESR's ^a
Test method 5.4.12, Minimum time to operate (spot reading equipment) test added		X	X
Test method 5.4.13 removed (Power supply interruptions etc, now part of EMC requirement of EN 50270)	X		
Test method 5.4.13, Battery capacity test added		X	X
Test method 5.4.14 (Power supply variations) modified	X		
Test method 5.4.16 removed (Attenuation of radiation, now part of 5.4.20, Long range operation)	X		
Requirements for test 5.4.16 (now Recovery from power supply interruption) modified	X		
Test method 5.4.19, Partial obscuration test added		X	X
Requirements for test 5.4.20 (Long range operation) modified	X		
Labelling and marking requirements modified	X		
Annex A removed (atmospheric visibility)	X		
New Annex A added (water vapour test apparatus)	X		
Bibliography much reduced	X		
The requirements of EN 50241-2 have been incorporated into the test methods of the new standard, thus combining the two previous standards into one	X		
^a ESR = Essential Health and Safety Requirements (Annex II of Directive 94/9/EC)			

General conclusion on the change of the State of the Art by this standard

CENELEC/TC 31 as the responsible committee has concluded that this new edition contains substantial changes regarding the ESRs.

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 given in Annex II, Clauses 1.5.5 to 1.5.8 of the EC Directive 94/9/EC:

- ER 1.5.5 to 1.5.7 – the essential safety requirements for devices with a measuring function for explosion protection
 - 1.5.5 is covered by 5.4 of this standard
 - 1.5.6 is covered by 4.2.1, 4.2.2, and 4.2.4
 - 1.5.7 is covered by 4.2.3 and 5.4
- ER 1.5.8 – the risks arising from software
 - 1.5.8 is covered by 4.3

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.

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Edition 1.0 2009-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Explosive atmospheres –

Part 29-4: Gas detectors – Performance requirements of open path detectors for flammable gases

[SIST EN 60079-29-4:2010](#)

Atmosphères explosives –

Partie 29-4: Détecteurs de gaz – Exigences d'aptitude à la fonction des détecteurs de gaz inflammables à chemin ouvert

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