

**Explosive atmospheres - Part 29-3: Gas detectors -  
Guidance on functional safety of fixed gas detection  
systems**

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## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN 60079-29-3:2014 sisaldab Euroopa standardi EN 60079-29-3:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 60079-29-3:2014 consists of the English text of the European standard EN 60079-29-3:2014.
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.
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English Version

Explosive atmospheres - Part 29-3: Gas detectors - Guidance on  
functional safety of fixed gas detection systems  
(IEC 60079-29-3:2014)

Atmosphères explosives - Partie 29-3: Détecteurs de gaz -  
Recommandations relatives à la sécurité fonctionnelle des  
systèmes fixes de détection de gaz  
(CEI 60079-29-3:2014)

Explosionsfähige Atmosphäre - Teil 29-3: Gasmessgeräte -  
Leitfaden zur funktionalen Sicherheit von ortsfesten  
Gaswarnsystemen  
(IEC 60079-29-3:2014)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

## Foreword

The text of document 31/1105A/FDIS, future edition 1 of IEC 60079-29-3, prepared by IEC TC 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60079-29-3:2014.

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) 2015-02-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-05-01

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

- IEC 60079-0, Explosive atmospheres – Part 0: Equipment – General requirements
- IEC 60079-29-1, Explosive atmospheres – Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases
- IEC 60079-29-2, Explosive atmospheres – Part 29-2: Gas detectors – Selection, installation, use and maintenance of detectors for flammable gases and oxygen
- IEC 60079-29-4, Explosive atmospheres – Part 29-4: Gas detectors – Performance requirements of open path detectors for flammable gases

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## Endorsement notice

The text of the International Standard IEC 60079-29-3:2014 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 60079-1	NOTE	Harmonised as EN 60079-10-1.
IEC 61511-1	NOTE	Harmonised as EN 61511-1.
IEC 61511-2	NOTE	Harmonised as EN 61511-2.
IEC 61511-3	NOTE	Harmonised as EN 61511-3.

**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](http://www.cenelec.eu)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-29-1 (mod)	-	Explosive atmospheres -- Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases	EN 60079-29-1	-
IEC 60079-29-2	2007	Explosive atmospheres -- Part 29-2: Gas detectors - Selection, installation, use and maintenance of detectors for flammable gases and oxygen	+AA EN 60079-29-2	2007
IEC 60079-29-4 (mod)	-	Explosive atmospheres -- Part 29-4: Gas detectors - Performance requirements of open path detectors for flammable gases	+EN 60079-29-2:2007/corrigendum Dec. 2007 EN 60079-29-4	2007 -
IEC 61508	series	Functional safety of electrical/electronic/programmable electronic safety-related systems	+AA EN 61508	series

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## EXPLOSIVE ATMOSPHERES –

### Part 29-3: Gas detectors – Guidance on functional safety of fixed gas detection systems

#### 1 Scope

This International standard gives guidance for the design and implementation of a fixed gas detection system, including associated and/or peripheral gas detection equipment, for the detection of flammable gases/vapours and Oxygen when used in a safety-related application in accordance with IEC 61508 and IEC 61511. This International standard also applies to the detection of toxic gases.

Other parts of this international standard and pertinent local, national and international standards separately specify the performance requirements of a gas detector and a gas detection control unit (logic solver). These standards are commonly known as Metrological Performance Standards and are concerned with the accuracy of the measured value, the overall system performance, but not the device or system integrity with respect to the safety function. This international standard applies to the integrity of the safety function.

NOTE In certain jurisdictions, it can be a requirement for a Certification Body to certify the performance of equipment for the measurement of flammable gases, vapours, toxic gases and/or Oxygen used in life safety applications.

This international standard sets out safety-related considerations of fixed gas detection systems, including associated and/or peripheral gas detection equipment in terms of the framework and philosophy of IEC 61508, and introduces the particular requirements demanded by a fixed gas detection system as shown in Figure 2.

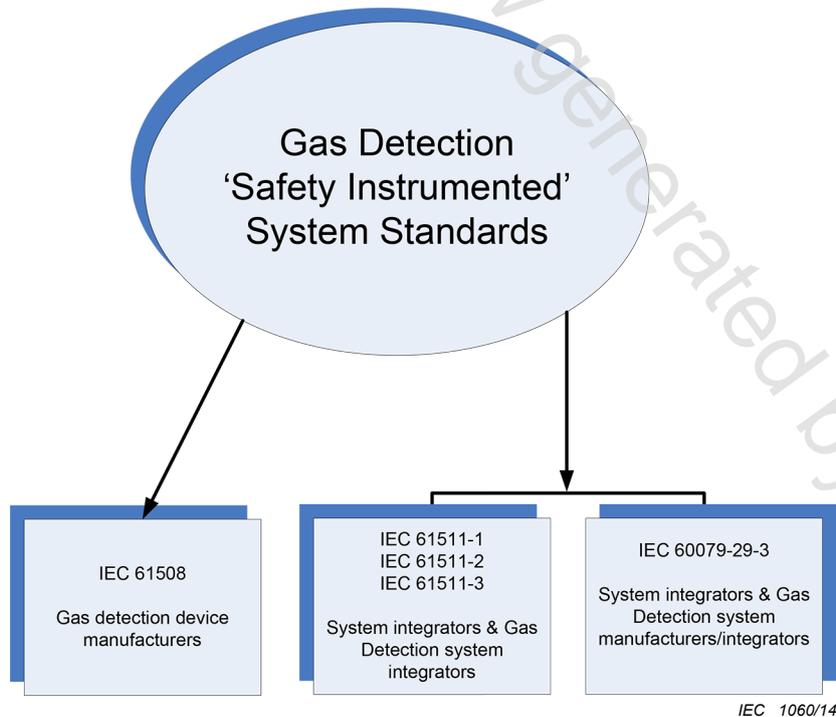


Figure 2 – Related Safety Instrumented System Standards