



BSI Standards Publication

Explosive atmospheres

Part 29-0: Gas detection equipment — General requirements and test methods

This is a preview of BS EN IEC 60079-29-0:2026. [Click here to purchase the full version from the ANSI store.](#)

National foreword

This British Standard is the UK implementation of EN IEC 60079-29-0:2026. It is identical to IEC 60079-29-0:2025. It supersedes BS EN 60079-29-4:2010 and BS EN 60079-29-1:2016+A11:2022, both of which will be withdrawn on 31 January 2029.

The UK participation in its preparation was entrusted to Technical Committee EXL/31, Equipment for explosive atmospheres.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Amendments/corrigenda issued since publication

Date	Text affected
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1:2016/A11:2022

English Version

Explosive atmospheres - Part 29-0: Gas detection equipment -
General requirements and test methods
(IEC 60079-29-0:2025)

Atmosphères explosives - Partie 29-0: Détecteurs de gaz -
Exigences générales et méthodes d'essai
(IEC 60079-29-0:2025)

Explosionsgefährdete Bereiche - Teil 29-0: Gaswarngeräte
- Allgemeine Anforderungen und Prüfverfahren und
mögliche ergänzende Normenteile.
(IEC 60079-29-0:2025)

This European Standard was approved by CENELEC on 2026-01-01. 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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document 31/1889/FDIS, future edition 1 of IEC 60079-29-0, prepared by TC 31 "Equipment for explosive atmospheres" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60079-29-0:2026.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2027-01-31 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2029-01-31 document have to be withdrawn

This document supersedes EN 60079-29-4:2010, EN 60079-29-1:2016 and EN 50104:2019 and all of its amendments and corrigenda (if any).

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

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The text of the International Standard IEC 60079-29-0:2025 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 standard indicated:

IEC 60079-29-1	NOTE	Approved as EN 60079-29-1
IEC 60079-29-3	NOTE	Approved as EN 60079-29-3
IEC 60079-29-4	NOTE	Approved as EN 60079-29-4
ISO 6142-1	NOTE	Approved as EN ISO 6142-1
ISO 6145-1	NOTE	Approved as EN ISO 6145-1
ISO 6145-4	NOTE	Approved as EN ISO 6145-4
ISO 6145-5	NOTE	Approved as EN ISO 6145-5
ISO 6145-6	NOTE	Approved as EN ISO 6145-6
ISO 6145-7	NOTE	Approved as EN ISO 6145-7
ISO 6145-9	NOTE	Approved as EN ISO 6145-9
ISO 6145-10	NOTE	Approved as EN ISO 6145-10
ISO 20581	NOTE	Approved as EN 482

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(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where 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.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-29-2	-	Explosive atmospheres - Part 29-2: Gas detectors - Selection, installation, use and maintenance of detectors for flammable gases and oxygen	EN 60079-29-2	-
IEC 62990-2	-	Workplace atmospheres - Part 2: Gas detectors - Selection, installation, use and maintenance of detectors for toxic gases and vapours	EN IEC 62990-2	-
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 IEC 60079-0	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 61000-4-29	-	Electromagnetic compatibility (EMC) - Part 4-29: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests	EN 61000-4-29	-
IEC 61326-1	-	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements	EN IEC 61326-1	-
IEC 62990-1	-	Workplace atmospheres - Part 1: Gas detectors - Performance requirements of detectors for toxic gases	-	-
ISO/IEC 80079-20-1	-	Explosive atmospheres - Part 20-1: Material characteristics for gas and vapour classification - Test methods and data	EN ISO/IEC 80079-20-1	-

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FOREWORD	4
INTRODUCTION	6
1 Scope	7
2 Normative references	8
3 Terms and definitions	8
3.1 Gas properties	8
3.2 Structure (or composition) of gas detection equipment	9
3.3 Sensors	11
3.4 Supply of gas to equipment	11
3.5 Signals and alarms	12
3.6 Times	14
3.7 Type OP open path gas detection equipment and fixed point infrared detectors	15
4 General requirements	16
4.1 Overview	16
4.2 Design	17
4.2.1 General	17
4.2.2 Indicators and means of indication	17
4.2.3 Alarm signal(s)	19
4.2.4 Fault signals	20
4.2.5 Special state indication	20
4.2.6 Adjustments	21
4.2.7 Battery-powered equipment	21
4.2.8 Software-controlled equipment	21
4.3 Marking	22
4.4 Instructions	23
5 Test methods	26
5.1 General	26
5.2 General requirements for tests	26
5.2.1 Samples and sequence of tests	26
5.2.2 Preparation of equipment before testing (all Types excluding FL-OP and TX-OP)	28
5.2.3 Preparation of equipment before testing (Types FL-OP and TX-OP)	29
5.3 Normal conditions for test	31
5.3.1 General	31
5.3.2 Test gas(es)	31
5.3.3 Flow rate for test gases	33
5.3.4 Power supply	33
5.3.5 Temperature	33
5.3.6 Pressure	33
5.3.7 Humidity	33
5.3.8 Acclimation time	34
5.3.9 Orientation	34
5.3.10 Communications options	34
5.4 Tests	34
5.4.1 General	34
5.4.2 Unpowered storage	35

This is a preview of BS EN IEC 60079-29-0:2026. [Click here to purchase the full version from the ANSI store.](#)

5.4.4	Drop test.....	37
5.4.5	Calibration kit	37
5.4.6	Linearity.....	37
5.4.7	Alarm set-point(s)	38
5.4.8	Stability	39
5.4.9	Gas concentrations above the upper limit of indication.....	40
5.4.10	Poisons and other gases	41
5.4.11	Temperature.....	43
5.4.12	Pressure (equipment with sensors only)	44
5.4.13	Humidity of test gas	44
5.4.14	Air velocity (diffusion equipment only)	45
5.4.15	Flow rate (aspirated equipment only)	45
5.4.16	Warm-up time.....	46
5.4.17	Time of response	46
5.4.18	Time of recovery	47
5.4.19	Sampling probe	47
5.4.20	Operation at or below the lower limit of measurement (Type O2-DE only).....	47
5.4.21	Extended operation in test gas (Type TX only)	47
5.4.22	Orientation	48
5.4.23	Battery capacity for battery-powered equipment.....	48
5.4.24	Power supply variations for externally powered equipment.....	49
5.4.25	Electromagnetic immunity	49
5.4.26	Fault signal tests	51
5.4.27	Software controlled equipment	53
5.4.28	Environmental protection	53
5.4.29	Beam block fault (Type FL-OP and TX-OP except for topographic reflection).....	54
5.4.30	Water vapour interference (Open path only).....	55
5.4.31	Alignment (Open path only except for topographic detectors)	55
5.4.32	Partial obscuration (Open path only)	56
5.4.33	Long range operation (Open path only)	56
5.4.34	Direct solar radiation (Open path only).....	56
5.4.35	Signal intensity variation (Open path topographic reflection only).....	57
5.4.36	Scanning performance (Open path topographic reflection only).....	57
Annex A (normative)	Acceptance criteria for Type FL	58
A.1	Type FL-Group I	58
A.2	Type FL-Group II	60
A.3	Type FL-Group II hydrogen.....	63
Annex B (normative)	Acceptance criteria for Type O2.....	66
Annex C (normative)	Acceptance criteria for Type TX.....	69
Annex D (normative)	Acceptance criteria for Type FL-OP and Type TX-OP	71
Annex E (normative)	Gas specific performance requirements.....	73
Annex F (normative)	Determination of time of response and time of recovery	74
F.1	General	74
F.2	Calculation of times of response and times of recovery.....	74
F.3	Pressure, temperature and gas velocities.....	75
F.4	Time of response and time of recovery methods for diffusion equipment.....	75

This is a preview of BS EN IEC 60079-29-0:2026. [Click here to purchase the full version from the ANSI store.](#)

F.4.2	Calibration mask method 2.....	76
F.4.3	Flow method.....	77
F.4.4	Injection method	78
F.5	Time of response and time of recovery methods for aspirated equipment	78
F.5.1	Test rig	78
F.5.2	Equipment without internal pump	78
F.5.3	Equipment with internal pump	79
F.6	Open path detection equipment (Types FL-OP and TX-OP).....	80
Annex G (informative)	Transient considerations	81
G.1	Underdamped time of response.....	81
G.2	Underdamped time of recovery	83
Annex H (informative)	Open path gas detection equipment water vapour test apparatus	86
	Bibliography.....	87
Figure 1	– Relationship between indication range and measuring range.....	13
Figure 2	– Warm-up time in clean air (typical).....	15
Figure 3	– Warm-up time in standard test gas (typical)	15
Figure 4	– Example of functional components of gas detection equipment.....	16
Figure 5	– Gas cell for calibration and speed of response test.....	30
Figure F.1	– Test chamber for calibration mask method 1	76
Figure F.2	– Test arrangement for calibration mask method 2	77
Figure F.3	– Schematic example of test chamber for flow method.....	78
Figure F.4	– Schematic example of test rig for use with aspirated equipment.....	79
Figure G.1	– Monotonic characteristic of overdamped or critically damped time response	81
Figure G.2	– Underdamped time response	83
Figure G.3	– Determination of time of recovery for the normal case, the deadband case and the underdamped case	85
Figure H.1	– Example of water vapour test apparatus.....	86
Table 1	– Indicators.....	17
Table 2	– Test samples and sequence of tests	26
Table A.1	– Acceptance criteria for Type FL-Group I.....	58
Table A.2	– Acceptance criteria for Type FL-Group II	60
Table A.3	– Acceptance criteria for Type FL-Group II hydrogen.....	63
Table B.1	– Acceptance criteria for Type O2 equipment (Type O2-DE & Type O2-IN).....	66
Table C.1	– Acceptance criteria for Type TX equipment (Type TX-SM & Type TX-HM)	69
Table D.1	– Acceptance criteria for Type FL-OP & Type TX-OP	71
Table E.1	– Gas specific performance requirements.....	73

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Explosive atmospheres - Part 29-0: Gas detection equipment - General requirements and test methods

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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IEC 60079-29-0 has been prepared by the IEC technical committee 31: Equipment for explosive atmospheres. It is an International Standard.

This first edition of IEC 60079-29-0 cancels and replaces the second edition of 60079-29-1 published in 2016 and its Amendment 1:2020, and the first edition of IEC 60079-29-4 published in 2009. In addition, IEC 60079-29-0 Type TX-SM cancels and replaces Type SM of the first edition of IEC 62990-1; however, Type TX-HM will remain within the standard.

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Draft	Report on voting
31/1889/FDIS	31/1935/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

Users of this document are advised that interpretation sheets clarifying the interpretation of this document can be published. Interpretation sheets are available from the IEC webstore and can be found in the "history" tab of the page for each document.

A list of all parts in the IEC 60079-29 series, published under the general title *Explosive atmospheres*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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This part of IEC 60079-29 specifies general requirements, test methods and acceptance criteria that apply to flammable, oxygen and toxic gas detection equipment intended to detect gases and vapours and to provide an indication, alarm or other output function for personnel or property protection in industrial and commercial applications. This part of IEC 60079-29 was developed for the purpose of aligning requirements and test methods of gas detection equipment within a single consolidated document for consistency.

Although a wide range of conditions can be encountered in practice, this document specifies requirements to be fulfilled by gas detection equipment when tested under prescribed laboratory conditions.

General and performance requirements for Type TX-HM gas detection equipment intended for occupational exposure measurement in the region of Occupational Exposure Limit Values are set out in IEC 62990-1.

Consideration needs to also be given to the following relevant international standards:

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

IEC 62990-2, *Workplace atmospheres - Part 2: Gas detectors - Selection, installation, use and maintenance of detectors for toxic gases and vapours*

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

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NOTE 1 The term gas detection equipment is often referred to as the term gas detector.

NOTE 2 The terms 'gas' and 'gases' used in this document are also intended to include 'vapour' and 'vapours'.

This document applies to the following gas detection equipment:

- Gas detection equipment Type "FL" intended for the detection of flammable gases:
 - Type FL-Group I, in mines susceptible to firedamp;
 - Type FL-Group II, in locations other than mines susceptible to firedamp; and
 - Type FL-OP, open path gas detection equipment for flammable gases.
- Gas detection equipment Type "O2" intended for the detection of oxygen:
 - Type O2-DE, detection of oxygen deficiency or oxygen enrichment; and
 - Type O2-IN, inertisation as measuring function for explosion protection.

NOTE 3 Inertisation is an explosion protection technique where an explosive atmosphere is purged with inert gas.

- Gas detection equipment Type "TX" intended for the detection of toxic gases:
 - Type TX-SM, detection in areas for safety monitoring applications and typically using alarm signalling;
 - Type TX-HM, occupational exposure measurement in the region of occupational exposure limit values; and

NOTE 4 Type TX-HM gas detection equipment performance requirements reside in IEC 62990-1.

- Type TX-OP, open path gas detection equipment for toxic gases.

NOTE 5 This document addresses equipment giving a level of performance suitable for general purpose applications. Specific applications might require particular tests or evaluations that are additional to and separate from the compliance with this document.

NOTE 6 Although the focus of this document is gas detection equipment for use in 'explosive atmospheres', this document can be applicable to detection in areas not formally classified as 'explosive atmospheres'.

NOTE 7 Refrigerant gas detection equipment used for life, health and safety area monitoring are within the scope of this document or IEC 62990-1.

This document is not applicable to equipment:

- used for medical applications;
- used only in laboratories for analysis or measurement;
- used only for process monitoring or control purposes (such as a gas analyser);
- used in the domestic environment;
- used in environmental air pollution monitoring;
- used for flue gas analysis;
- used for sampling systems external to the gas detection equipment;
- with samplers and concentrators such as sorbents or paper tape having an irreversible indication;
- consisting of a passive optical receiver without a dedicated optical source;
- equipment within the scope of IEC 60335-2-40 and IEC 60335-2-89.