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BSI Standards Publication

Electronic portable and transportable apparatus designed to detect and measure carbon dioxide and/or carbon monoxide in indoor ambient air — Requirements and test methods

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This British Standard is the UK implementation of EN 50543:2011. It supersedes BS 8494:2007, which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee EXL/31, Equipment for explosive atmospheres, to Subcommittee EXL/31/1, Gas detectors.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English version

Electronic portable and transportable apparatus designed to detect and measure carbon dioxide and/or carbon monoxide in indoor ambient air - Requirements and test methods

Matériels électroniques portables et transportables de détection et de mesure du dioxyde de carbone et/ou du monoxyde de carbone dans l'air ambiant intérieur des locaux - Exigences et méthodes d'essai

Tragbare und transportable elektrische Geräte für die Detektion und Messung von Kohlendioxid und/oder Kohlenmonoxid in Innenraumluft - Anforderungen und Prüfverfahren

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CENELEC

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

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Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 216, Gas detectors.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50543 on 2011-02-01.

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 EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2012-02-01
 - latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2014-02-01
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1 Scope

This European Standard specifies requirements for the construction, testing and performance of electronic portable and transportable apparatus for the detection and measurement of carbon dioxide (CO₂) and/or carbon monoxide (CO) in indoor ambient air, which includes air entering mechanical ventilation systems in domestic residential, commercial and industrial premises and public buildings.

This European Standard includes indoor air quality apparatus with CO and CO₂ measuring capabilities.

This European Standard excludes:

- apparatus used in workplace atmospheres for the direct detection and direct concentration measurement of toxic gases and vapours (i.e. conforming to EN 45544 series);
- electronic portable combustion gas analysers (i.e. conforming to EN 50379 series);
- apparatus for the detection of carbon monoxide in domestic premises (i.e. conforming to EN 50291 series).

NOTE 1 Examples of applications are monitoring indoor air quality, measuring CO and/or CO₂ concentrations in commercial laundry and kitchen environments, assessing the safe operation of appliances installed in compartments.

NOTE 2 When this apparatus is used in industrial premises national regulations may apply.

2 Normative references

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.

EN 50270:2006, *Electromagnetic compatibility – Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen*

EN 50271:2010, *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 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal) (IEC 60068-2-6)*

EN 60335-1:2002 + corr. Jul. 2009 + corr. May 2010, *Household and similar electrical appliances – Safety – Part 1: General requirements (IEC 60335-1:2001, mod.)*

EN 60529:1991 + corr. May. 1993, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

ambient air

normal atmosphere surrounding the apparatus

NOTE The concentration of CO₂ in ambient air is typically different from the concentration in outdoor air.

3.2

clean air

air that contains CO₂ at outdoor air concentrations but is free of CO and other gases and vapours to which the sensor is sensitive or which influence the performance of the sensor

3.3

battery-powered

apparatus designed to be energized from batteries alone, whether disposable or rechargeable