

Electrical apparatus for the detection of carbon monoxide in domestic premises — Test methods and performance requirements

The European Standard EN 50291:2001 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 50291:2001. It supersedes BS 7860:1996 which will be withdrawn on 1 April 2006.

The UK participation in its preparation was entrusted by Technical Committee GEL/31/19, Gas detectors, to Subcommittee GEL/31/19/3, Domestic gas detectors, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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**Electrical apparatus for the detection of carbon monoxide
in domestic premises -
Test methods and performance requirements**

Appareils électriques pour la détection
de monoxyde de carbone dans les
locaux à usage domestique -
Méthodes d'essais et prescriptions
de performances

Elektrische Geräte für die Detektion
von Kohlenmonoxid in Wohnhäusern -
Prüfverfahren und Anforderungen an
das Betriebsverhalten

This European Standard was approved by CENELEC on 2000-08-01. 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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CENELEC

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

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Foreword

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

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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) 2002-02-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-04-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes A and B are informative.

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1 Scope

This European Standard specifies general requirements for the construction, testing and performance of electrically operated carbon monoxide gas detection apparatus, designed for continuous operation in domestic premises. The apparatus may be mains or battery powered. Such apparatus is intended to warn of an accumulation of CO, enabling the occupant to react before being exposed to significant risk.

This standard specifies two types of apparatus, these are:

Type A - to provide a visual and audible alarm and an executive action in the form of an output signal that can be used to actuate directly or indirectly a ventilation or other ancillary device.

Type B - to provide a visual and audible alarm only.

This standard excludes apparatus:

- for the detection of combustible gases, other than carbon monoxide itself; (see EN 50194:2000);
- for the detection of CO in industrial installations or commercial premises; (see EN 45544 series);
- for use in boats, caravans or mobile homes;
- for CO measurement for smoke and fire detection (see prEN 12239).

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 50270	1999	Electromagnetic compatibility - Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen
EN 50292	2001	Electrical apparatus for the detection of carbon monoxide in domestic premises – Guide on the selection, installation, use and maintenance
EN 60335-1	1994	Safety of household and similar electrical appliances Part 1: General requirements (IEC 60335-1:1991, mod.)
EN 60529	1991	Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)
EN 60704-1	1997	Household and similar electrical appliances - Test code for the determination of airborne acoustical noise Part 1: General requirements (IEC 60407-1:1997)

3 Definitions

For the purposes of this European Standard the following definitions apply:

3.1

ambient air

the normal atmosphere surrounding the apparatus

3.2

clean air

air which is free of carbon monoxide, interfering and contaminating substances

3.3

domestic premises

any house or building being a place of residence or home of a household, family or person

3.4

fixed installation

an apparatus which is intended to have all parts except replaceable batteries permanently installed

3.5

latching alarm

an alarm which, once activated, requires deliberate action for resetting

3.6

sensor

an assembly in which the sensing element is housed and which may contain associated circuit components

3.7

sensing element

a device, the output of which will change in the presence of carbon monoxide

3.8

volume ratio (V/V)

ratio of the volume of a component to the volume of the gas mixture

3.9

output signal

a signal characterised by a standby and an activation state by which action may be initiated, e.g. triggering a ventilation device

3.10

warm-up time

the time interval between the time when the apparatus is switched on and the time when the apparatus is fully operational

3.11

alarm set point

a fixed setting of the apparatus that determines the volume ratio and duration of exposure at which the apparatus will automatically initiate an alarm and, for type A apparatus an output signal

3.12**fault signal**

a visual and/or audible signal indicating a faulty or failed apparatus

3.13**mains-powered apparatus**

an apparatus designed to be powered by the normal domestic mains electrical supply, with or without an alternative power source

3.14**battery-powered apparatus**

an apparatus designed to be powered by batteries only

3.15**continuous operation**

apparatus which is continuously powered with continuous or intermittent automatic sensing

4 General requirements**4.1 General**

Unless otherwise stated, the requirements specified are applicable to both type A and type B apparatus.

The apparatus shall reliably detect the presence of carbon monoxide in domestic premises under the stated application conditions, shall produce an alarm, and in the case of Type A apparatus, shall be able to initiate executive actions whenever the conditions (in terms of both level and duration) exceed pre-set alarm set points.

Apparatus which includes functionality additional to carbon monoxide detection shall perform according to the requirements of this standard and to the requirements of any standards relevant to the additional functionality.

The apparatus, electrical assemblies and components shall comply with the requirements of 4.2 to 4.6 and the performance requirements of clause 5. Apparatus shall be designed for continuous operation. The apparatus shall not be class 0 as defined in EN 60335-1.

4.2 Construction

The apparatus shall comply with the appropriate requirements of EN 60335-1 as listed in Table 1.