



SLOVENSKI STANDARD

SIST EN 50244:2016

01-junij-2016

Nadomešča:
SIST EN 50244:2001

Električne naprave za zaznavanje vnetljivega plina v gospodinjstvih - Vodilo za izbiro, vgraditev, uporabo in vzdrževanje

Electrical apparatus for the detection of combustible gases in domestic premises - Guide on the selection, installation, use and maintenance

Elektrische Geräte für die Detektion von brennbaren Gasen in Wohnhäusern - Leitfaden für Auswahl, Installation, Einsatz und Wartung

Appareils électriques pour la détection des gaz combustibles dans les locaux à usage domestique - Guide de sélection, d'installation, d'utilisation et de maintenance

Ta slovenski standard je istoveten z: EN 50244:2016

ICS:

13.320 Alarmni in opozorilni sistemi Alarm and warning systems

SIST EN 50244:2016

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50244:2016

<https://standards.iteh.ai/catalog/standards/sist/1046f472-9caa-4077-97a0-89046917ac9e/sist-en-50244-2016>

EUROPEAN STANDARD

EN 50244

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2016

ICS 13.320

Supersedes EN 50244:2000

English Version

Electrical apparatus for the detection of combustible gases in domestic premises - Guide on the selection, installation, use and maintenance

Appareils électriques pour la détection des gaz combustibles dans les locaux à usage domestique - Guide de sélection, d'installation, d'utilisation et de maintenance

Elektrische Geräte für die Detektion von brennbaren Gasen in Wohnhäusern - Leitfaden für Auswahl, Installation, Einsatz und Wartung

This European Standard was approved by CENELEC on 2016-03-14. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

Contents	Page
European foreword.....	3
Introduction.....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions.....	5
4 Sensing of combustible gas.....	6
5 Types of apparatus.....	7
6 Installation.....	8
6.1 General.....	8
6.2 Gas releases.....	8
6.2.1 General.....	8
6.2.2 Source of the gas escape.....	8
6.2.3 Examples of behaviour of gas releases.....	9
6.2.4 Positioning of the gas detector.....	10
6.3 Remote Detector Heads.....	12
6.4 Mains power supply.....	12
7 Executive functions (type A apparatus only).....	13
7.1 General.....	13
7.2 Shut-off valve.....	13
7.3 Ventilation fan.....	13
7.4 Main electric switch.....	13
7.5 Remote alarm.....	13
7.6 Additional visual alarm.....	13
7.7 Link between detector and ancillary device.....	13
7.8 Fault relays.....	13
8 Advice to the user.....	14
8.1 Manufacturer's instructions.....	14
8.2 Location.....	14
8.3 Power supply.....	14
8.4 Indicators.....	14
8.5 Alarms.....	14
8.6 Maintenance.....	15
8.7 Lifetimes.....	15
9 Emergency actions.....	15
Bibliography.....	16

European foreword

This document (EN 50244:2016) has been prepared by CLC/TC 216 “Gas detectors”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-03-14
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-03-14

This document supersedes EN 50244:2000.

EN 50244:2016 includes the following significant technical changes with respect to EN 50244:2000 (various minor changes have also been made):

- General information added to cover domestic premises, boats and caravans. This is a result of the splitting of EN 50194 into EN 50194-1 and EN 50194-2.
- In Clause 4 text has been added regarding alarm set points for apparatus complying with EN 50194-1.
- A new Clause 5 has been created to provide further information to the user concerning the differences between Type A and Type B devices.
- Former Clause 5 has been renumbered Clause 6, text has been reformulated to avoid repetition and make it easier to understand.
- New Figures 1 and 2 created, to show the typical locations of combustible gas alarms when used with Natural Gas and LPG installations.
- The text in Clause 7 “Executive Actions” has been aligned with EN 50292, where applicable, for combustible gas alarms.
- In Clause 8 “Advice to the User”, additional text has been added to highlight the differences between location of a combustible gas detector and a carbon monoxide alarm.

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

EN 50244:2016 (E)**Introduction**

This European Standard is intended to be a guide for people who, in the course of their professional activities, are required to install combustible gas detectors in domestic premises. It is also aimed at anyone who might supply such gas detectors to members of the public for subsequent installation by competent persons according to national regulations, so that advice may be given based on good engineering practice.

Apparatus for the detection of combustible gases are not a substitute for good gas installation practice and regular servicing of gas appliances, although they may provide an added margin of reassurance for users of gaseous fuels. Domestic combustible gas detectors with or without some form of executive function may overcome fears of fuel safety and can be particularly beneficial in certain circumstances.

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

[SIST EN 50244:2016](https://standards.iteh.ai/catalog/standards/sist/1046f472-9caa-4077-97a0-89046917ac9e/sist-en-50244-2016)

<https://standards.iteh.ai/catalog/standards/sist/1046f472-9caa-4077-97a0-89046917ac9e/sist-en-50244-2016>

1 Scope

This European Standard provides information on the selection, installation, use and maintenance of apparatus for the detection of combustible gas designed for continuous operation in a fixed installation in domestic premises as described in the EN 50194 series. This guide should be read in conjunction with any additional relevant national or local regulations.

The European Standard refers to the installation of two types of apparatus designed to operate in the event of an escape of town gas, natural gas or liquefied petroleum gas:

- Type A apparatus - to provide a visual and audible alarm and an executive action in the form of an output signal that may actuate directly or indirectly a shut-off device and/or other ancillary device;
- Type B apparatus - to provide visual and audible alarms only.

This guide is not applicable to the use of apparatus:

- for the detection of toxic gases such as carbon monoxide, see EN 50292;
- for industrial or commercial premises, see EN 60079-29-2.

2 Normative references

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.

EN 1775, *Gas supply - Gas pipework for buildings - Maximum operating pressure less than or equal to 5 bar - Functional recommendations*

EN 50194 (all parts), *Electrical apparatus for the detection of combustible gases in domestic premises*

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

3 Terms and definitions

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

3.1

lower explosive limit

LEL

volume ratio of combustible gas or vapour in air below which an explosive gas atmosphere will not be formed

3.2

upper explosive limit

UEL

volume ratio of combustible gas or vapour in air above which an explosive gas atmosphere will not be formed

3.3

continuous operation

apparatus which is continuously powered with continuous or intermittent automatic sensing

EN 50244:2016 (E)**3.4****sensor**

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

3.5**sensing element**

device, the output of which will change in the presence of combustible gas

3.6**ventilation**

movements and replacement of air resulting from wind, temperature gradients, or artificial means (e.g. fans or extractors)

3.7**relative density**

density of gas or vapour relative to the density of air at the same pressure and at the same temperature

Note 1 to entry: Air is equal to 1,0.

3.8**gas detection apparatus**

apparatus comprising the sensor, remote sensor if applicable, alarm and other circuit components, power supply and for type A apparatus a means of providing an output signal

3.9**domestic premises**

house or building which is the place of residence or home of a household, family or person

3.10**fixed installation**

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

3.11**output signal**

signal characterized by a standby state and an activated state by which action may be initiated

EXAMPLE Triggering of a shut-off device.

3.12**warm-up time**

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

3.13**volume ratio (v/v) (commonly referred to as concentration)**

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

4 Sensing of combustible gas

There are three main hazards arising from combustible gases: explosion, poisoning and annoxia (insufficient oxygen). This document deals only with the explosion hazard of combustible gases.

Distributed gas has an odour added at source to ensure that the general public may recognize any leakage by a characteristic smell. Most people may detect this odour at quite low gas concentration levels (2 % LEL, or less) but some medical conditions as well as increasing age may result in a reduction in the sense of smell. A gradually increasing gas concentration may also

go unnoticed due to olfactory fatigue (temporary inability to distinguish an odour, due to continued exposure of a smell.)

The conditions under which combustion occurs are variable and is dependent upon the gas composition. When the concentration level of gas is between the LEL and UEL and there is a source of ignition, the gas mixture will burn or explode. For natural gas, the LEL is between 4 % v/v and 5 % v/v of gas in air and the UEL is about 15 % v/v of gas in air. For LPG, the LEL is between 1 % v/v and 2 % v/v of gas in air and the UEL is about 10 % v/v of gas in air.

The alarm set points of devices compliant with the EN 50194 series shall be between 3 % and 20 % LEL of the gas to be detected, which means that an alarm will activate well before an ignition hazard occurs.

Each apparatus is specifically designed and calibrated for a specific gas hence it is essential that an apparatus, calibrated for one gas, is not used to detect another.

5 Types of apparatus

There are many different types of gas sensors available, for example, catalytic, semiconductor and infrared, details of which may be found in EN 60079-29-2. Gas detection apparatus should comply with the requirements of EN 50194-1 and EN 50194-2, as applicable.

Various additional options may be available to the person selecting the apparatus to be installed, in addition to gas detection.

Some systems may incorporate sensors other than those for detection of flammable gases, such as carbon monoxide, and care should be taken to avoid confusion between different signals that may require conflicting actions by the user. Such problems might best be overcome by integrating individual apparatus, together with a centralized control and alarm annunciator.

The main choice is between type A or type B apparatus (that is, with or without an executive function, see Clause 7) either of which may involve further considerations as follows:

- Type A: <https://standards.iteh.ai/catalog/standards/sist/1046f472-9caa-4077-97a0-89046917ac9e/sist-en-50244-2016>

May be particularly useful for people with some physical disability that might delay a manual response to an alarm. They are more likely to be used in a fixed (rather than portable or transportable) installation, because of the need to transmit an output signal for activation of the ancillary device(s). However developments in communication technologies (such as wireless) may allow even greater flexibility, so long as the overall reliability of the gas detection system is not compromised.

The principal advantage of Type A devices is that the output signal can be used to activate an isolation valve to shut off the incoming gas supply.

- Type B:

Intended for either fixed or portable installation, with portable apparatus almost certainly powered from high capacity internal batteries alone. Besides the usual siting considerations, special care should be taken with portable units to ensure that they are always properly positioned in relation to the ambient air being sampled. In addition, the user should be cautioned against intermittent operation of the apparatus and dropping or damaging it while being re-located.

Type B devices have the disadvantage in that there is no automatic executive action possible.