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STN	**Elektrická požiarna signalizácia. Časť 31: Viacsnímačové požiarne hlásiče. Bodové hlásiče s kombinovaným dymovým snímačom, snímačom oxidu uhoľnatého a voliteľným tepelným snímačom.**	**STN EN 54-31** 92 0404

Fire detection and fire alarm system - Part 31: Multi-sensor fire detectors - Point detectors using a combination of smoke, carbon monoxide and optionally heat sensors

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/15

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English Version

Fire detection and fire alarm system - Part 31: Multi-sensor fire detectors - Point detectors using a combination of smoke, carbon monoxide and optionally heat sensors

Systèmes de détection et d'alarme incendie - Partie 31: Détecteurs d'incendie multicapteurs - Détecteurs ponctuels combinant l'utilisation de capteurs de fumée, de capteurs de monoxyde de carbone et éventuellement de capteurs de chaleur

Brandmeldeanlagen - Teil 31: Mehrfachsensor-Brandmelder - Punktförmige Melder mit kombinierten Rauch-, CO- und optionalen Wärmesensoren

This European Standard was approved by CEN on 25 October 2014.

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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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 54-31:2014) has been prepared by Technical Committee CEN/TC 72 “Fire detection and fire alarm systems”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2015 and conflicting national standards shall be withdrawn at the latest by December 2017.

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

EN 54, *Fire detection and fire alarm systems*, consists of the following parts:

— *Part 1: Introduction*

— *Part 2: Control and indicating equipment*

— *Part 3: Fire alarm devices – Sounders*

— *Part 4: Power supply equipment*

— *Part 5: Heat detectors – Point detectors*

— *Part 7: Smoke detectors – Point detectors using scattered light, transmitted light or ionization*

— *Part 10: Flame detector – Point detectors*

— *Part 11: Manual call points*

— *Part 12: Smoke detectors – Line detector using an optical light beam*

— *Part 13: Compatibility assessment of system components*

— *Part 14: Technical Specification: Guidelines for planning, design, installation, commissioning, use and maintenance*

— *Part 16: Voice alarm control and indicating equipment*

— *Part 17: Short circuit isolators*

— *Part 18: Input/output devices*

— *Part 20: Aspirating smoke detectors*

— *Part 21: Alarm transmission and fault warning routing equipment*

— *Part 22: Resettable Line-type heat detectors*

— *Part 23: Fire alarm devices – Visual alarms*

— *Part 24: Components of voice alarm systems – Loudspeakers*

— *Part 25: Components using radio links and system requirements*

— *Part 26: Point fire detectors using carbon monoxide sensors*

— *Part 27: Duct smoke detectors*

— *Part 28: Non-resettable (digital) line type heat detectors*

— *Part 29: Point detectors using a combination of smoke and heat sensors*

— *Part 30: Point detectors using a combination of carbon monoxide and heat sensors*

— *Part 31: Point detectors using a combination of smoke, carbon monoxide and optionally heat sensors*

— *Part 32: Guidelines for the planning, design, installation, commissioning, use and maintenance of voice alarm systems*

NOTE This list includes standards that are in preparation and other standards may be added. For current status of published standards refer to www.cen.eu.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Multi-sensor fire detectors using a combination of smoke, carbon monoxide and optionally heat sensors complying with this document are general purpose fire detectors. Multi-sensor detectors can be used to achieve

— a high stability against deceptive phenomena,

— a response to a broad range of fires.

Compared to the standards for single phenomenon detectors, additional environmental requirements were included to demonstrate a higher stability.

Different categories are introduced to distinguish between different detector behaviour and to identify detectors or detector settings including the signal of an optional heat sensor.

For detectors or detector settings of the categories M (without heat sensor) and MT (with heat sensor) requirements apply to demonstrate that the detector is capable of withstanding the presence of a high level of a single fire phenomenon alone without giving a fire alarm.

For detectors or detector settings of the categories N (without heat sensor) and NT (with heat sensor) no requirements apply regarding the release of a fire alarm caused by the exposure to a single fire phenomenon alone.

The response to a broad range of fires is shown by including the test fires TF1 and TF8 in addition to the test fires TF2 to TF5 which are used for detectors complying with EN 54-7.

The performance of single sensor components of a multi-sensor detector need not comply with the standards for single phenomena fire detectors (EN 54-5, EN 54-7, EN 54-26) however the combined performance does need to meet the requirements of this standard.

1 Scope

This European Standard specifies requirements, test methods and performance criteria for point-type multi-sensor fire detectors for use in fire detection and fire alarm systems installed in and around buildings (see EN 54-1:2011), incorporating in one mechanical enclosure at least one optical or ionization smoke sensor and at least one carbon monoxide (CO) sensor and optionally one or more heat sensors, utilizing the combination of the detected phenomena. This European Standard covers only modes of operation, where at least the signals of both smoke and carbon monoxide sensors are continuously evaluated.

This European Standard provides for the assessment and verification of constancy of performance (AVCP) of point detectors using a combination of smoke, carbon monoxide and optionally heat sensors to this EN.

Point detectors using a combination of smoke, carbon monoxide and optionally heat sensors, which are having special characteristics suitable for the detection of specific fire risks are not covered by this European Standard. The performance requirements for any additional functions are beyond the scope of this standard (e.g. additional features or enhanced functionality for which this European Standard does not define a test or assessment method).

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 54-1:2011, *Fire detection and fire alarm systems — Part 1: Introduction*

EN 54-5:2000, *Fire detection and fire alarm systems — Part 5: Heat detectors — Point detectors*

EN 54-5:2000/A1:2002, *Fire detection and fire alarm systems — Part 5: Heat detectors — Point detectors*

EN 50130-4:2011, *Alarm systems — Part 4: Electromagnetic compatibility — Product family standard: Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems*

EN 60068-1:1994, *Environmental testing — Part 1: General and guidance (IEC 60068-1:1988)*

EN 60068-2-1:2007, *Environmental testing — Part 2-1: Tests — Test A: Cold (IEC 60068-2-1:2007)*

EN 60068-2-2:2007, *Environmental testing — Part 2-2: Tests — Test B: Dry heat (IEC 60068-2-2:2007)*

EN 60068-2-6:2008, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal) (IEC 60068-2-6:2008)*

EN 60068-2-27:2009, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock (IEC 60068-2-27:2009)*

EN 60068-2-30:2005, *Environmental testing — Part 2-30: Tests — Test Db: Damp heat, cyclic (12 h + 12 h cycle) (IEC 60068-2-30:2005)*

EN 60068-2-42:2003, *Environmental testing — Part 2-42: Tests — Test Kc: Sulphur dioxide test for contacts and connections (IEC 60068-2-42:2003)*

EN 60068-2-78:2001, *Environmental testing — Part 2-78: Tests — Test Cab: Damp heat, steady state (IEC 60068-2-78:2001)*

ISO 209:2007, Aluminium and aluminium alloys — Chemical composition