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Fire detection and fire alarm systems - Part 13: Compatibility and connectability assessment of system components

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 54-13:2017+A1:2019 sisaldab Euroopa standardi EN 54-13:2017+A1:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 54-13:2017+A1:2019 consists of the English text of the European standard EN 54-13:2017+A1:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.12.2019.	Date of Availability of the European standard is 18.12.2019.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.220.20

EUROPEAN STANDARD

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English Version

Fire detection and fire alarm systems - Part 13: Compatibility and connectability assessment of system components

Systèmes de détection incendie - Partie 13: Évaluation de la compatibilité et de l'aptitude au raccordement des composants d'un système

Brandmeldeanlagen - Teil 13: Bewertung der Kompatibilität und Anschließbarkeit von Systembestandteilen

This European Standard was approved by CEN on 14 November 2016 and includes Amendment approved by CEN on 2 October 2019.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 54-13:2017+A1:2019) has been prepared by Technical Committee CEN/TC 72 “Fire detection and fire alarm system”, 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of an identical text or by endorsement, at the latest by June 2020, and conflicting national standards shall be withdrawn at the latest by June 2020.

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

This document includes Amendment 1 approved by CEN on 2 October 2019.

This document supersedes ▌A1⟩ EN 54-13:2017 ⟨A1▌.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1⟩ ⟨A1▌.

EN 54-13 has been revised to update the standard by taking into account new techniques of communication and new technologies available on the market.

It includes new clauses and annexes as follows:

— Clause 4.3 Transmission paths

— Annex A example of levels used in fire detection and alarm system

— Annex D software design documentation

— Annex E flowchart for assessment

The main technical modifications are the following:

— The standard is applicable to electrical wires, optical fibre or radio frequency connection.

— EN 54-1:2011 is taken into account and leads to delete the flowchart of functions.

— Introduction of levels (field, control and management) and network transmission path to consider new technique of configuration.

— Transfer of product requirements covering partial open and partial short circuits to an optional clause included in EN 54-2.

EN 54 is published in a series of parts. Information on the relationship between this document and other standards of the EN 54 series is given in Annex A of EN 54-1:2011.

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 detectors – Point detectors*

— *Part 11: Manual call points*

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

— *Part 13: Compatibility assessment of system components*

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

— *Part 15: Point detectors using a combination of detected phenomena*

— *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 alarm devices*

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

— *Part 25: Components using radio links*

— *Part 26: Carbon monoxide detectors – Point detectors*

— *Part 27: Duct smoke detectors*

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

— *Part 29: Multi-sensor fire detectors - Point detectors using a combination of smoke and heat sensors*

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

— *Part 31: Multi-sensor fire detectors – 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.

EN 54-1 provides additional information about the components performing the functions of a fire detection and fire alarm system.

EN 54-25 provides additional information and requirements about systems using radio frequency links.

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

Introduction

The fire detection function is to detect a fire at the earliest practicable moment, and to give signals and indications so that appropriate action can be taken.

The fire alarm function is to give, at least, audible and/or visible signals to the occupants of a building who may be at risk from fire.

A fire detection and fire alarm system (including voice alarm system) may combine the functions of detection and alarm in a single system, and typically consists of a number of inter-linked components including automatic fire detectors, manual call points and alarm devices. These components are connected to control and indicating equipment by means of one or more transmission paths. All system components, including the control and indicating equipment, are also directly or indirectly connected to a power supply.

A separate voice alarm system can be assessed for compatibility and connectability independently of the fire detection and alarm system.

A fire detection and fire alarm system may also be linked to remote fault and fire alarm monitoring stations, and to fire protection and/or building management systems. However these systems are not considered as part of the fire detection and fire alarm system.

It is necessary that all the components constituting the fire detection and fire alarm system are compatible or connectable, and that requirements relating to the performance of the overall system are fulfilled.

Differentiation is made between components classified as components type 1 and other components classified as components type 2.

As the possible configurations of fire detection and fire alarm systems are unlimited, the assessment is only carried out on the configuration(s) declared by the applicant.

The intended use of this standard is to demonstrate the compatibility and connectability of components even if they are not defined by an EN 54 standard.

1 Scope

This European Standard specifies the requirements for compatibility and connectability assessment of components of fire detection and fire alarm systems (including voice alarm systems as a subsystem of fire detection and fire alarm system). The components conform to either with the requirements of EN 54 or with a manufacturer's specification where there is no EN 54 standard.

The requirements for the transmission path used for a distributed function are covered by the relevant EN 54 standard and not by this document.

This document also specifies requirements for the integrity of the fire detection and fire alarm system when connected to other systems.

This document does not specify the manner in which the system is designed, installed and used in any particular application.

This document recognizes that it is not practical to assess the compatibility or connectability of components in all possible configurations. Methods of assessment are specified to reach an acceptable degree of confidence within pre-determined operational and environmental conditions.

This document specifies requirements related to compatibility and connectability assessment methods and tests for the components belonging to FDAS or connecting FDAS.

This document does not cover components or functions which are not included in a FDAS like functions achieved by a building management system.

This document is applicable to systems where the components are interconnected by electrical wires or optical fibre or by radio frequency links or by any combination. For other interconnection technology between components this standard may be used as a guidance.

NOTE Other European Standards are expected to cover the requirements of the other systems which may be connected to the fire detection and fire alarm system.

2 Normative references

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.

EN 50130-4, *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 50130-5, *Alarm systems - Part 5: Environmental test methods*

EN 60068-1, *Environmental testing - Part 1: General and guidance*

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

EN 54-2, *Fire detection and fire alarm systems - Part 2: Control and indicating equipment*

EN 54-4, *Fire detection and fire alarm systems - Part 4: Power supply equipment*

EN 54-16, *Fire detection and fire alarm systems - Part 16: Voice alarm control and indicating equipment*

EN 54-25, *Fire detection and fire alarm systems - Part 25: Components using radio links*