SLOVENSKI STANDARD
SIST EN 50134-2:2018

01-januar-2018

Nadomešča:
SIST EN 50134-2:2000

Alarmni sistemi - Socialni alarmni sistemi - 2. del: Sprožilniki

Alarm systems - Social alarm systems - Part 2: Trigger devices

Alarmanlagen - Personen-Hilferufanlagen - Teil 2: Auslösegeräte

Systèmes d'alarme - Systèmes d'alarme sociale - Partie 2: Déclencheurs

Ta slovenski standard je istoveten z: EN 50134-2:2017

ICS:

13.320 Alarmni in opozorilni sistemi Alarm and warning systems

SIST EN 50134-2:2018 **en,fr**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50134-2

November 2017

ICS 13.320

Supersedes EN 50134-2:1999

English Version

Alarm systems - Social alarm systems - Part 2: Trigger devices

Systèmes d'alarme - Systèmes d'alarme sociale - Partie 2: Déclencheurs

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

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Ref. No. EN 50134-2:2017 E

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European foreword

This document (EN 50134-2:2017) has been prepared by CLC/TC 79 “Alarm systems”.

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) 2018-08-14
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2020-08-14

This document supersedes EN 50134-2:1999.

EN 50134-2:2017 includes the following significant technical changes with respect to EN 50134-2:1999:

— The scope has been extended to provide requirements for manually and automatically activated trigger devices transmitting a triggering signal;

— The normative references have been updated to take account of latest revisions and to include ETSI EN 300 220-3-1 ETSI EN 303 406 for wireless radio trigger devices;

— The definitions have been updated to reflect changes in other parts of the series;

— in the general requirements, some requirements have been added to cover both manually and automatically activated trigger devices;

— New or amended requirements have been added to include:

  — The activation of one or many trigger devices not to inhibit the transmission of a triggering signal from any other trigger device within the same or adjacent systems.

  — Trigger devices to generate an alarm triggering signal that can be decoded and differentiated from that of another trigger device connected to the same local unit or controller.

  — Trigger devices using wire-free communications to transmit an identification code with sufficient different combinations to prevent the operation of the trigger device producing unwanted triggering in an adjacent system.

  — Trigger devices using wire-free communications to automatically generate a triggering signal at least once every 24 h to indicate their continued active presence.

  — No longer require a portable trigger devices where its only function is to used as part of a social alarm system to use primary non -rechargeable batteries.

  — Functional Requirements:

    — Require the manufacturer to state the normal expected rate of activation for the device being not less than one activation per day.

    — Require the trigger device to be capable of operating to the manufacturer’s specified performance level for a period of at least 1 year or, if greater, the manufacturer’s stated duration without recharging or replacement of the battery.

- For devices where the trigger device is activated by a push button require to be physically distinguishable from any other controls.

- Revise the push button of activation area to a minimum of 150 mm^2, with a minimum dimension of not less than 10 mm.

- For automatically activated trigger devices where the option exists, to indicate the return to the normal condition to the local unit and controller the manufacturer to indicate the conditions by which the normal state is determined.

— In interconnections & Communications, a requirement to comply with EN 50134-5 has been added.

— Addition for a trigger device using a wireless radio interconnection require to comply with the requirements of ETSI EN 300 220-3-1 or ETSI EN 303 406 applicable to the frequency in use.

— Addition of requirements where a trigger device uses bi-directional techniques for communicating an alarm triggering signal to the local unit and controller.

— In documentation, requirements have been amended for marking and user documentation.

— Tests for manually activated trigger devices have been amended to reflect revisions to reference standards.

— Removal of the requirement to test in accordance with EN 300-220-2 and publish results of tests for wire free radio interconnections.

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

EN 50134, *Alarm systems — Social alarm systems* is currently composed of the following parts:

— *Part 1: System requirements*;

— *Part 2: Trigger devices* [the present document];

— *Part 3: Local unit and controller*;

— *Part 5: Interconnections and communications*;

— *Part 7: Application guidelines* [Technical Specification].

Introduction

A social alarm system provides 24 h facilities for alarm triggering, identification, signal transmission, alarm reception, logging and 2-way speech communication, to provide reassurance and assistance for people considered to be at risk.

A social alarm system comprises a number of system parts, which can be configured in different ways to provide this functionality.

A user can request assistance by the use of a manually activated trigger device resulting in an alarm triggering signal. In certain cases alarm triggering signals can be generated by automatic trigger devices. A local unit or controller receives the alarm triggering signal, switching from the normal to the alarm condition and indicating this to the user (some systems use an optional pre-alarm condition that allows the user to reset the alarm for a short period of time).

Failure in the operation of a social alarm system or any of its parts may compromise the ability to provide timely reassurance and assistance which may lead to a risk to a user's life. The trigger device is a part of the system and should be designed to ensure reliability beyond that of a normal consumer device.

The design should take into consideration how to make it easier for the user to activate the trigger device while preventing accidental triggering of the device.

This standard specifies the minimum requirements for the trigger device to ensure this system part provides the functionality and reliability required by a social alarm system.

1 Scope

This European Standard specifies the requirements for manually and automatically activated trigger devices transmitting a triggering signal.

This European Standard specifies the requirements and tests for trigger devices forming part of a social alarm system.

This European Standard applies to all trigger devices that transmit a triggering signal to a local unit or controller using wired or wire-free interconnections methods.

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 50134-1:2002, *Alarm systems - Social alarm systems - Part 1: System requirements*

EN 50134-5, *Alarm systems - Social alarm systems - Part 5: Interconnections and communications*

EN 60447, *Basic and safety principles for man-machine interface, marking and identification - Actuating principles (IEC 60447)*

EN 61020-1:2009, *Electromechanical switches for use in electrical and electronic equipment - Part 1: Generic specification (IEC 61020-1:2009)*

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*

ETSI EN 300 220-3-1, *Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz; Part 3-1: Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Low duty cycle high reliability equipment, Social Alarms Equipment operating on designated frequencies (869,200 MHz to 869,250 MHz)*

ETSI EN 303 406, *Short Range Devices (SRD); Social Alarms Equipment operating in the frequency range 25 MHz to 1 000 MHz*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 50134-1:2002 and the following apply.

3.1
social alarm system
system providing 24 h facilities for alarm triggering, identification, signal transmission, alarm reception, 2-way speech communication, reassurance and assistance, for use by persons considered to be at risk

3.2
controller
interface between one or more local units and the alarm transmission system

3.3
local unit
interface between the user and the controller which enables two-way speech

3.4
trigger device
system part operated by a person or automatically that communicates to the local unit or controller, initiating the alarm triggering signal

3.5
fixed trigger device
trigger device in a fixed position

3.6
portable trigger device
trigger device carried by the user and providing wire-free communication

3.7
interconnections
transmission system that provides the communication between trigger devices and local unit and controller

3.8
alarm condition
condition following the reception of an alarm triggering signal and the pre-alarm condition

3.9
triggering signal
signal transmitted by a trigger device to the local unit and controller, indicating an alarm, fault, change in state or other event

4 Requirements

4.1 General Requirements

The requirements for the design, function and testing of the different types of manually and automatically activated trigger devices are as a minimum:

a) The activation of one or many trigger devices shall not inhibit the transmission of a triggering signal from any other trigger device within the same or adjacent systems.

b) Trigger devices shall generate an alarm triggering signal that can be decoded and differentiated from that of another trigger device connected to the same local unit or controller.

c) Trigger devices using wire-free communications shall transmit an identification code with sufficient different combinations to prevent the operation of the trigger device producing unwanted triggering in an adjacent system.

d) Trigger devices using wire-free communications shall automatically generate a triggering signal at least once every 24 h to indicate their continued active presence.

4.2 Functional requirements

4.2.1 Trigger device with an internal primary battery

a) The manufacturer shall state the normal expected rate of activation for the device being not less than one activation per day.

b) The trigger device shall be capable of operating to the manufacturer's specified performance level for a period of at least 1 year or, if greater, the manufacturer's stated duration without recharging or replacement of the battery.

c) The trigger device shall generate a fault warning signal to the local unit or controller when the battery voltage has decreased to the lower limit (V_B min as specified by the manufacturer) and it can sustain normal expected usage for that device for a further 28 d.

d) Where applicable the manufacturer shall describe the battery replacement procedures.

4.2.2 Trigger device using the mains supply as its primary source of power

a) If the primary power source is interrupted, the trigger device shall automatically be switched to the secondary power source without any interruption to the operation of the device;

b) The trigger device shall continue to operate for a minimum period of 24 h if the mains supply is interrupted.

c) The trigger device shall generate a fault warning triggering signal within 2 h of a mains supply failure if the primary power source has not been restored during this time.

d) If the secondary power source is a rechargeable battery, a fully discharged battery shall be recharged to a minimum of 80 % of its nominal capacity within 24 h and to its rated capacity within another 48 h.

e) The trigger device shall generate a fault warning triggering signal at the point that the battery voltage has decreased to the lower limit (V_B min as specified by the manufacturer) and it is able to sustain normal expected usage for that device for a further 2 h.

4.2.3 Manually activated trigger devices

a) The method of activation shall be non-latching and requiring a single action by the user.

b) Where the trigger device is activated by a push button it shall be physically distinguishable from any other controls.

c) The push button shall have a minimum activation area of 150 mm^2 with a minimum dimension of not less than 10 mm.

d) Where the trigger device is activated by a pull switch, it shall have at least one grip connected to the pull switch body by a rigid or flexible link to ensure that, where appropriate, it can be activated at floor level. The grip shall be designed to meet the requirements of EN 60447.

4.2.4 Automatically activated trigger devices

Where the option exists for the automatically activated trigger device to indicate the return to the normal condition to the local unit and controller the manufacturer shall indicate the conditions by which the normal state is determined. Examples of automatically activated trigger devices include smoke detectors, carbon monoxide detectors, flammable gas detectors, bed occupancy sensors, chair occupancy sensors, ambient temperature monitors, motion detectors.

4.3 Interconnections and communications

4.3.1 A trigger device shall comply with the applicable interconnection requirements of EN 50134-5.

4.3.2 A trigger device using a wireless radio interconnection shall comply with the requirements of ETSI EN 300 220-3-1 or ETSI EN 303 406 applicable to the frequency in use

4.3.3 Where a trigger device uses bi-directional techniques for communicating an alarm triggering signal to the local unit and controller, the trigger device shall:

a) re-transmit the alarm triggering signal until confirmation of its successful receipt by the local unit and controller;

b) exhaust all techniques available specified by the manufacturer to ensure successful communication with the local unit and controller within a period of no more than 60 s;

c) in the case of a manual trigger device, provide local indication that the alarm triggering signal has been successfully received at the local unit and controller.

4.4 Documentation

4.4.1 Marking

In addition to mandatory marking requirements, the trigger devices shall be marked with as a minimum the manufacturer's product reference and the date of manufacture or batch number or serial number.

The information may be provided in a coded form where there is insufficient space on the trigger device.

The information marked on the trigger device shall be legible and durable.

4.4.2 User documentation

The manufacturer shall supply installation and user documentation. The documentation shall comprise at least the following:

I. General description of the equipment;

II. Installation instructions including the suitability for use in various environments (environmental classes);

III. Operating and commissioning instructions;

IV. Maintenance and cleaning instructions;

V. Technical specifications;

VI. Radio-transmitter parameters;

VII. Environmental class.

5 Test of manually activated trigger devices

5.1 Test categories

The tests are divided into 2 categories:

a) functional tests according to 5.5;

b) environmental tests according to 5.6.

5.2 Standard atmospheric condition for testing

Unless otherwise required, the normal temperature, humidity and air pressure conditions for tests shall be any convenient combination within the following ranges: