



SLOVENSKI STANDARD
SIST EN 50134-3:2001

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Alarmni sistemi - Socialni alarmni sistemi - 3. del: Lokalna enota in krmilnik

Alarm systems - Social alarm systems -- Part 3: Local unit and controller

Alarmanlagen - Personen-Hilferufanlagen -- Teil 3: Örtliche Zentrale und Steuereinrichtung

Systemes d'alarme - Systemes d'alarme sociale -- Partie 3: Unité locale et contrôleur

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EUROPEAN STANDARD

EN 50134-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2001

ICS 13.320

English version

**Alarm systems -
Social alarm systems
Part 3: Local unit and controller**

Systemes d'alarme -
Systemes d'alarme sociale
Partie 3: Unité locale et contrôleur

Alarmanlagen -
Personen-Hilferufanlagen
Teil 3: Örtliche Zentrale und
Steuereinrichtung

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This European Standard was approved by CENELEC on 2000-04-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared by the CENELEC Technical Committee 79 : Alarm systems.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50134-3 on 2000-04-01.

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) 2003-04-01

Annexes designated "normative" are part of the body of the standard. In this standard, annexes A and B are normative.

EN 50134 will consist of the following parts, under the general title "Alarm systems - Social alarm systems :

- Part 1 System requirements,
- Part 2 Trigger devices,
- Part 3 Local unit and controller,
- Part 4 (free),
- Part 5 Interconnections and communications,
- Part 6 (free),
- Part 7 Application guidelines.

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Introduction

Since malfunctions in local units and controllers may involve the risk of human life, it is essential that the technical quality and reliability of such equipment should be higher than that normally required for consumer electronics.

The design should also take into consideration situations where the user may be unable to send an alarm, or where an unwanted alarm may be sent, due to technical malfunctions or poor ergonomic design.

1 Scope

This standard specifies the requirements and tests for local units and controllers forming part of a social alarm system.

This standard applies to local units and controllers that receive an alarm triggering signal from manually or automatically activated trigger devices and convert this into an alarm signal for transmission to the alarm receiving centre or an alarm recipient.

The local unit and controller are either separate units or integrated into one unit.

This standard does not specify EMC emission or electrical safety requirements. These are covered by other standards.

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 50130-4 + A1	1995 1998	Alarm systems – Part 4: Electromagnetic compatibility – Product family standard : Immunity requirements for components of fire, intruder and social alarm systems
EN 50130-5	1998	Alarm systems – Part 5: Environmental test methods
EN 50134-2	1999	Alarm systems - Social alarm systems – Part 2: Trigger devices
EN 60529 + corr. May	1991 1993	Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)
EN 60068-1	1994	Environmental testing – Part 1: General and guidance (IEC 60068-1:1988 + corrigendum Oct. 1988 + A1:1992)
ETS 300 113	1996	Radio Equipment and Systems (RES); Land mobile service; Technical characteristics and test conditions for radio equipment intended for the transmission of data (and speech) and having an antenna connector

3 Definitions

For the purposes of this standard, the following definitions apply :

3.1

social alarm system

system providing 24 h facilities for alarm triggering, identification, signal transmission, alarm reception, two-way speech communication, reassurance and assistance, for use by persons who can be considered to be living at home at risk

3.2

alarm receiving centre (ARC)

system part which provides facilities for communication with a number of controllers, and providing the alarm receiving and information processing system as an interface to the alarm recipient

3.3

local unit

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

3.4

controller

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

3.5

trigger device

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

3.6

fixed trigger device

trigger device in a fixed position in relation to the local unit or building

3.7

portable trigger device

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

3.8

activity monitoring trigger device

alarm device that operates automatically when a routine activity of the user, being monitored by a trigger device, is modified within a specified period

3.9

interconnections

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

3.10

alarm transmission system

transmission system that provides communication between the controller and the alarm receiving centre or an alarm recipient

3.11

normal condition

condition during which the system is fully operational and is not in any other condition

3.12

pre-alarm condition

condition following the reception of an alarm triggering signal

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3.13**alarm condition**

condition following the pre-alarm condition

3.14**fault condition**

condition following detection of a fault by the local unit and controller, that prevents the functioning of the system

3.15**disconnection condition**

temporary and deliberate disconnection of a local unit to prevent alarm or fault transmission to the controller or the alarm receiving centre

3.16**reassurance indication**

indication provided locally in alarm condition in order to verify to the user that the local unit has received the alarm triggering signal

3.17**fault indication**

indication of a fault condition

3.18**pre-alarm warning indication**

indication at the local unit that the local unit is in the pre-alarm condition

3.19**disconnection indication***

indication of the disconnection condition

3.20**alarm triggering signal**

signal transmitted by a trigger device to indicate an alarm

3.21**reset**

return of the alarm system to the normal condition

3.22**alarm recipient**

person who receives and acts upon an alarm signal

3.23**user**

person living at home at risk.

4 Functional requirements

4.1 General

- a) Unless otherwise noted the requirements of this standard are the same for a local unit and a controller.
- b) If an optional function is implemented the related requirement shall be fulfilled.
- c) The local unit and controller shall be protected against environmental influences by a box or a cabinet of suitable mechanical strength, which shall be classified to at least IP30 as specified in EN 60529.

NOTE 1 If the controller is installed in a separate protected and locked room, the requirement is not applicable.

- d) All mandatory manual controls and visual indications for a local unit or combined local unit and controller shall be contained in one mechanical unit and their purpose shall be clearly indicated.

NOTE 2 If the controller is a separate unit all manual controls and visual indications related to the function or facility of the controller may be contained in the separate controller.

4.2 Detailed functional requirements

The functions of a local unit and controller are divided into the following groups :

- inputs,
- signal processing,
- indications,
- operating controls,
- outputs for external indications or controls (optional),
- interconnections,
- alarm transmission.

4.2.1 Inputs

4.2.1.1 Input signals from trigger devices

- a) The input signals from trigger devices are transmitted to the local unit and controller via cable and/or wire-free radio transmission.

Such signals shall be stored in the local unit and controller, and indicated locally and/or transmitted to the alarm receiving centre or an alarm recipient in accordance with the functional requirements of this standard.

- b) The wire-free radio receiver in the local unit and controller (if a receiver is available in the controller) and the associated transmitter type of trigger device shall fulfil the requirements of the local countries appropriate radio regulatory requirements.

4.2.1.2 Primary supply input

- a) If a local unit or controller is mains powered it shall have an indication of sufficient mains power, or an indication of the lack of sufficient mains power.
- b) If the primary source of power is a battery, it shall be capable of supplying power to the local unit and controller for a minimum of 12 months of normal operation, including a minimum of one alarm transmission and two-way-speech communication per day for a minimum of 1 min. Additionally the local unit and controller shall be capable of indicating a battery low fault warning signal at the local unit and controller, and transmitting it to the alarm receiving centre or an alarm recipient automatically for a minimum of seven days.
- c) If a controller is powered from the alarm transmission system it shall have an indication of sufficient power or an indication of the lack of sufficient power.

4.2.1.3 Secondary supply input

If the primary power source is mains power according to 4.2.1.2 a) or the alarm transmission system according to 4.2.1.2 c) the following applies :

- a) In case of failure of the primary power source, power to the local unit and controller shall be maintained by a secondary power source. The secondary power source shall be capable of supplying power to the local unit and controller for a minimum of 8 hs in normal condition, including a minimum of half an h of alarm condition during which alarm transmission and two-way speech communication occurs.
- b) If the primary power source is the mains there must be no power taken from the secondary power source when the local unit and controller is in the normal condition except for battery monitoring purposes. The requirement applies with the allowed variations of the mains.
- c) If the primary power source is interrupted the local unit and controller shall automatically be switched to the secondary power source without any interruptions to the operation of the device.
- d) If the secondary supply input 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.

4.2.1.4 User speech input

- a) There shall be a two-way speech communication facility between the user and the alarm recipient.
- b) The two-way speech communication between the user and the local unit shall be hands-free.

4.2.2 Signal processing

- a) The signal processing of an alarm triggering signal shall comply with the requirements to function, indication and timing as shown in the diagram of annex A and described in 4.2.2.1 and 4.2.2.2.
- b) If a manually selectable condition can inhibit the sending of an alarm signal it shall not be possible to select this condition without the use of a tool, key or code.
- c) In the event of more than one signal, none of the signals that have not already been processed shall be lost.
- d) Mandatory alarm and fault signals shall have priority over non-mandatory alarm and fault signals.
- e) Alarm signals shall have priority over all other signals.

4.2.2.1 Pre-alarm condition (optional)

- a) The indication of the pre-alarm condition shall be given and cancellation of the pre-alarm warning signal shall be possible in accordance with 4.2.3.1 and 4.2.4.2 respectively.
- b) The pre-alarm condition shall be initiated after the reception of an alarm triggering signal.

- c) If this condition is not cancelled within the pre-alarm condition period the local unit and controller shall change its state to the alarm condition in accordance with 4.2.2.2 b).
- d) During pre-alarm condition an audible and/or visible pre-alarm warning indication shall be given locally in accordance with 4.2.3.1.

4.2.2.2 Alarm condition

- a) If the pre-alarm function is not implemented, the alarm condition shall be initiated not more than 10 s after the trigger device has been manually- activated by the user.
- b) If pre-alarm condition is implemented, the alarm condition shall be initiated not more than 10 s after the pre-alarm condition period has elapsed.
- c) During the alarm condition the local unit and controller shall :
 - 1) automatically initiate the alarm transmission system to transmit the alarm signal to the alarm receiving centre or an alarm recipient,
 - 2) give audible and/or visible indications locally as a reassurance signal in accordance with 4.2.3.2,
 - 3) provide a two-way speech communication which confirms to the user that the alarm signal from a manually-activated trigger device has been received by the alarm receiving centre or an alarm recipient,
 - 4) distinguish between manual and automatic alarm trigger signals and transmit a coded signal to the alarm receiving centre or an alarm recipient.
- d) The alarm condition shall be reset from the alarm receiving centre or by an alarm recipient or it shall be manually reset on the local unit and controller.

4.2.2.3 Fault condition

a) Types of fault

The local unit and controller shall detect and distinguish the following faults :

- Type A : Fault in the primary power source ;
- Type B : Discharge of any battery (primary or secondary source of power) below the battery low voltage level as specified by the manufacturer ;
- Type C : Battery low warning signal received from fixed or portable trigger devices ;
- Type D : Disconnections or short circuits of the cable interconnections between a fixed trigger device and the local unit and controller ;

NOTE The fault in the interconnections may be indicated and transmitted to the alarm receiving centre or an alarm recipient as an alarm signal if it is not possible to distinguish between a fault and an alarm condition.

- Type E : Fault in the cable interconnections which prevents the local unit and controller from meeting the requirements of this standard ;
- Type F : The presence of a continuous radio signal for a minimum of 30 s that may inhibit the reception of an alarm triggering signal from a trigger device ;

Type G : Disconnection of the controller from the alarm transmission system for a minimum of 60 s. A fault type G shall be indicated within the time specified in Table 1.

b) Time intervals

The time intervals -from the time the fault occurs, and until it is indicated locally or transmission to the alarm receiving centre or an alarm recipient has been initiated- shall be in accordance with the requirements of Table 1.

Table 1 - Permissible time intervals by different types of fault

Type of fault	T_{F1}	T_{F2}
A	1 h to 3 h	≤ 10 s
B	≤ 120 s	N/A
C	≤ ($T_{PAC} + 120$) s	N/A
D	≤ ($T_{PAC} + 120$) s	N/A
E	≤ 120 s	≤ 10 s
F	≤ 120 s	≤ 10 s
G	N/A	≤ 10 s

Abbreviations :

T_{F1} : Permissible time interval between the occurrence of fault condition and until initiation of the alarm transmission system for transmission of the fault to the alarm receiving centre or an alarm recipient occurs.

T_{F2} : Permissible time interval between the occurrence of fault condition and until local indication occurs.

T_{PAC} : Pre-alarm condition period in s.

N/A : Not applicable.

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c) Detailed requirements

The local unit and controller shall provide :

- 1) Transmission of a signal dedicated to a fault type C, to the alarm receiving centre or an alarm recipient.
- 2) Transmission of other faults by a minimum of a common fault signal to the alarm receiving centre or an alarm recipient.
- 3) Audible and/or visible indication locally of the types of fault in accordance with 4.2.3.3.
- 4) A fault signal until logging has taken place at the alarm receiving centre or with an alarm recipient, and/or until the service personnel have identified the type of failure even though the cause of the fault has ceased.