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Alarm systems – Social alarm systems – Part 5: Interconnections and communications

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CENELEC
European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

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Foreword

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

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50134-5 on 2004-10-01.

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)	2005-10-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2007-10-01

Contents

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.

1 Scope

This European Standard specifies the minimum requirements for the interconnections and communications within a social alarm system.

2 Normative references

The following referenced documents are indispensable for the application 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.

Publication	Year	Title
EN 50134-3	2001	Alarm systems – Social alarm systems – Part 3: Local unit and controller
EN 50136-1-1	1998	Alarms systems – Alarm transmission systems and equipment – Part 1-1: General requirements for alarm transmission systems
EN 50136-2-1	1998	Alarm systems – Alarm transmission systems and equipment – Part 2-1: General requirements for alarm transmission equipment
EN 50136-2-2	1998	Alarm systems – Alarm transmission systems and equipment – Part 2-2: Requirements for equipment used in systems using dedicated alarm paths
EN 50136-2-3	1998	Alarm systems – Alarm transmission systems and equipment – Part 2-3: Requirements for equipment used in systems with digital communicators using the public switched telephone network
EN 50136-2-4	1998	Alarm systems – Alarm transmission systems and equipment – Part 2-4: Requirements for equipment used in systems with voice communicators using the public switched telephone network
EN ISO 3741	1999	Acoustics – Determination of sound power levels of noise sources using sound pressure – Precision methods for reverberation rooms (ISO 3741:1999)

3 Definitions and abbreviations

3.1 Definitions

For the purpose of this standard the following definitions apply:

3.1.1
social alarm system
system providing 24 hour 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

3.1.2
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

3.1.3
controller
interface between one or more local units and the alarm transmission system or alarm recipient

3.1.4
local unit
interface between the user and the controller which enables 2-way speech

3.1.5
trigger device
system part, operated by a human or automatically that communicates to the local unit and controller, initiating the alarm triggering signal

3.1.6
interconnections
transmission system that provides the communication between trigger devices and local unit and controller

3.1.7
alarm transmission system
transmission system that provides communication between the controller and the alarm receiving centre or an alarm recipient

3.1.8
pre-alarm condition
condition following the reception of an alarm triggering signal

3.1.9
alarm condition
condition following the pre-alarm condition

3.1.10
fault condition
condition following detection of a fault by the local unit and controller, that prevents the functioning of the system

3.1.11
pre-alarm warning indication
indication at the local unit that the local unit is in the pre-alarm condition

3.1.12
fault indication
indication of a fault condition

3.1.13
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

3.1.14
alarm triggering signal
signal transmitted by a trigger device to indicate an alarm

3.1.15
alarm recipient
person who receives and acts upon an alarm signal

3.1.16
fault reporting time
maximum interval from the time a fault occurs in the interconnection until the transmission of a fault signal is initiated by the controller

3.1.17
reference impedance Z_R
a complex impedance made up of 270 Ω in series with a parallel combination of 750 Ω and 150 nF

3.2 Abbreviations

For the purpose of this standard the following abbreviations have been used:

DTMF: Dual tone multi-frequency;

FSK: Frequency shift keying;

PSTN: Public switched telephone network;

EMC: Electromagnetic compatibility;

ETSI: European Telecommunications Standardisation Institute;

CCITT: International Telegraph & Telephone Consultative Committee;

CCIR: International Radio Consultative Committee;

CEPT: Conference of European Posts & Telecommunications.

4 General requirements

Equipment and systems shall meet appropriate local, national and European requirements and regulations for attachment to, establishment and termination of connection and transmission via public telephone and data networks (including the PSTN) and/or the regulations for transmission via the use of radio, power distribution systems or cable distribution systems.

5 Interconnections

5.1 General requirements

a) Interconnections in a social alarm system can use one or both of the transmission types in Table 1.

Table 1 – Transmission types

Transmission type	Examples
Wired	Leased lines/fixed wired connections/optical fibre link
Wire free	Radio network/cellular system, infra red

b) The interconnection in a social alarm system shall have an availability that fulfils the requirement set out in EN 50136-1-1:1998, Table 4, class A3.

NOTE Method of determining availability is described in 7.1.1.

c) For wire free trigger devices using a radio interconnection, without managed spectrum access only radio frequencies dedicated to social alarm systems shall be used for the transmission of alarm and fault conditions.

NOTE For wire free interconnections the availability of the interconnection is monitored not the availability or the correct functioning of the trigger device.

5.2 Requirements for two-way speech communication

The part of the interconnection in a social alarm system, which is used for 2-way speech communication shall fulfil the requirements specified in 5.2.1 and 5.2.2 below.

The test methods to be used for the verification of conformance with these requirements are given in the normative Annex A.

5.2.1 Loudspeaker output of the local unit

a) The local unit shall be capable of delivering an A-weighted sound power level of not less than 90 dB re 1 pW, with less than 10 % harmonic distortion.

b) The output shall be adjustable to less than 70 dB re 1 pW.

c) The frequency response shall be within the following limits:

Frequency band	Upper limit	Lower limit
315 Hz to 630 Hz	+ 5 dB	- 10 dB at 315 Hz increasing linearly with the logarithm of the frequency to - 5 dB at 630 Hz
630 Hz to 3 150 Hz	+ 5 dB	- 5 dB

5.2.2 Microphone input of the local unit

a) When the microphone is exposed to a sound pressure level of 60 dB re 20 µPa:

1) for a local unit and controller designed for connection to an analogue PSTN or equivalent leased line transmission system it shall deliver an analogue output signal to the alarm transmission system of (- 15 ± 3) dBV in to a reference impedance Z_R with less than 10 % harmonic distortion;

2) for a local unit and controller designed for connection to other alarm transmission systems, the output signal when received by the ARC via the alarm transmission system and converted into an amplified analogue signal shall result in a nominal line output voltage signal which, as specified by the manufacturer, corresponds to a loudspeaker sound power output level of not less than 80 dB re 1 pW, with less than 10 % of harmonic distortion.

b) The frequency response shall be within ± 5 dB in the frequency range of 315 Hz - 3,15 kHz.

6 Communications

6.1 General requirements

The alarm transmission system path in a social alarm system shall fulfil the requirements in Table 2.