

BS EN 50134-3:2012

Incorporating corrigendum July 2015



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Alarm systems — Social alarm systems

Part 3: Local unit and controller

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National foreword

This British Standard is the UK implementation of EN 50134-3:2012, incorporating corrigendum July 2015. It supersedes BS EN 50134-3:2001 which is withdrawn.

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

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

Alarmanlagen -
Personen-Hilferufanlagen -
Teil 3: Ortliche Zentrale und
Übertragungsgerät

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Foreword

This document (EN 50134-3:2012) 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) 2013-03-12
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2015-03-12

This document supersedes EN 50134-3:2001.

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The EN/TS 50134 series 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.
-

Introduction

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

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 European Standard specifies the minimum requirements and tests for local units and controllers forming part of a social alarm system.

This European 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 may be either separate units or integrated into one unit.

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 50130-4	2011	<i>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</i>
EN 50130-5	2011	<i>Alarm systems — Part 5: Environmental test methods</i>
EN 50134-2		<i>Alarm systems — Social alarm systems — Part 2: Trigger devices</i>
EN 60529 + corr. May + A1	1991 1993 2000	<i>Degrees of protection provided by enclosures (IP Code)</i> (IEC 60529:1989) (IEC 60529:1989/A1:1999)
EN 60068-1	1994	<i>Environmental testing — Part 1: General and guidance</i> (IEC 60068-1:1988 + A1:1992 + corrigendum Oct. 1988)
EN ISO 3741		<i>Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Precision methods for reverberation test rooms (ISO 3741)</i>
ETSI EN 300 220-1		<i>Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods</i>
ETSI EN 300 440-1		<i>Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 1: Technical characteristics and test methods</i>
ETSI EN 301 406		<i>Digital Enhanced Cordless Telecommunications (DECT); Harmonized EN for Digital Enhanced Cordless Telecommunications (DECT) covering the essential requirements under article 3.2 of the R&TTE Directive; Generic radio</i>

3 Terms and definitions

For the purposes of this document, the following terms and 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 considered to be 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

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

3.13

alarm condition

condition following the reception of an alarm triggering signal and 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 to the normal condition where only one alarm triggering signal has been received

3.22

alarm recipient

person who receives and acts upon an alarm signal

3.23

alarm transmission equipment

equipment which is primarily for the transmission of alarm and fault signals from the local unit and controller to the alarm receiving centre or the alarm recipient and which may be integral to the local unit and controller

3.24

two-way speech

speech communication originating at either end of the connection and received by the other

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 and IP32 for where it is intended for table top use 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 visual indicators described in 4.2.6 and manual controls described in 4.2.7 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.

- e) The local unit and controller shall be suitable for use in its intended environment and as a minimum shall satisfy the tests specified in 5.7 to meet the requirements for environmental class 1.

4.2 Detailed functional requirements

4.2.1 General

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

- power source,
- inputs,
- two-way speech communication,
- signal processing,
- indications,
- operating controls,
- outputs for external indications or controls (optional),
- interconnections,
- alarm transmission.

Where an alarm system consists of a local unit and a controller with separate alarm transmission equipment and / or separate radio transceiver equipment, the requirements for the local unit and controller shall apply to the related separate equipment, to the extent that those requirements are applicable to the intended functionality of the additional equipment.

4.2.2 Power source

4.2.2.1 Primary power source

- a) The local unit or controller shall have a visual indication that it is operating using the primary power source and is in the normal condition.
- 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 a fault signal to the alarm receiving centre or an alarm recipient automatically for a minimum of seven days.

4.2.2.2 Secondary supply input

Where the primary power source is mains power or the alarm transmission system then:

- a) if the primary power source is interrupted the local unit and controller shall automatically be switched to the secondary power source without any interruption to the operation of the device;
- b) in the case of failure of the primary power source,
 - 1) power to the local unit and controller shall be maintained by a secondary power source;
 - 2) the secondary power source shall be capable of supplying power to the local unit and controller for a minimum of 24 h in normal condition, including a minimum of half an hour of alarm condition during which alarm transmission and two-way speech communication occurs;
 - 3) 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;
 - 4) the battery low fault warning signal shall be generated no less than two hours before there shall be insufficient power to operate the unit as required in 4.2.2.2, list entry b), 2) and 3);
- c) 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.

4.2.3 Inputs — 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 transmission. Such signals shall be stored in the local unit and controller, indicated and transmitted to the alarm receiving centre or an alarm recipient in accordance with the functional requirements of this standard.
- b) For wire free trigger devices using a radio interconnection, without managed spectrum access only radio frequencies applicable to social alarm systems shall be used for the transmission of alarm and fault conditions.

4.2.4 Two-way speech communication

4.2.4.1 General

- a) There shall be a two-way speech communication facility between the local unit and controller and the ARC or the alarm recipient.
- b) The two-way speech communication shall require no manual operation at the local unit.
- c) The part of the local unit and controller which is used to provide two-way speech communication shall fulfil the requirements specified in 4.2.4.2 and 4.2.4.3.

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

4.2.4.2 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 limits shown in Table 1.

Table 1 — Limits of frequency response

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

4.2.4.3 Microphone input of the local unit

- a) If the local unit and controller is connected to an analogue PSTN or equivalent leased line transmission system then it shall be capable of delivering an analogue output signal to the alarm transmission system of (-15 ± 3) dBV into a reference impedance ZR with less than 10 % harmonic distortion when the microphone is exposed to a sound pressure level of 60 dB re 20 μ Pa.
- b) If the local unit and controller is designed for connection to other alarm transmission systems, then it shall output to the alarm transmission a signal representing 100 % of the local unit and controller's maximum output when the microphone is exposed to a sound pressure level of 90 dB re 20 μ Pa.
- c) The frequency response shall be within ± 5 dB in the frequency range of 315 Hz to 3,15 kHz.

4.2.5 Signal processing

4.2.5.1 General

- 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 4.2.5.2 and 4.2.5.3.
- 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) Alarm signals shall have priority over all other signals.
- e) Where the controller is designed for use with more than one local unit, it shall have:
 - 1) the facility to support more than one concurrent alarm transmission session;
 - 2) sufficient capacity to process, route and manage the number of concurrent alarm transmission sessions for which it is rated without deterioration in respect of the performance of the controller against the requirements in this standard or delays in the transmission of speech between a local unit and the ARC.