



BSI Standards Publication

Social alarm systems

Part 1: Design, installation and maintenance of social alarm systems in specialized grouped living environments – Code of practice

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Published by BSI Standards Limited 2019

ISBN 978 0 580 51708 2

ICS 13.320

The following BSI references relate to the work on this document:

Committee reference GW/1/12

Draft for comment 19/30367893 DC

Amendments/corrigenda issued since publication

Date	Text affected
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Summary of pages

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Foreword

Publishing information

This part of BS 8604 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 November 2019. It was prepared by Subcommittee GW/1/12, *Social alarms*, under the authority of Technical Committee GW/1, *Electronic security systems and products*. A list of organizations represented on these committees can be obtained on request to their secretary.

Relationship with other publications

This part of BS 8604 is intended to be the first part in a series. It is anticipated that further parts will be added to the series to cover other applications for social alarm systems.

Information about this document

This publication can be withdrawn, revised, partially superseded or superseded. Information regarding the status of this publication can be found in the Standards Catalogue on the BSI website at bsigroup.com/standards, or by contacting the Customer Services team.

Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

Use of this document

As a code of practice, this part of BS 8604 takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this part of BS 8604 is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Introduction

A social alarm system provides facilities for alarm triggering, identification, signal transmission, alarm reception, logging and, where applicable, two-way speech communication, to provide reassurance and assistance to individuals living in a specialized grouped living environment.

The customer requirements, design, installation, configuration, commissioning, handover (customer acceptance) and maintenance of social alarm systems often involves many stakeholders, each of which has a specific interest in how the works are performed. This new British Standard is intended to guide those stakeholders in the provision of a timely installation of a reliable and robust grouped living system, to serve the needs of the site(s) and its residents.

The stakeholders can include, but are not limited to, the customer; the specifier; the system designer; the installation organization; the commissioning organization; the alarm receiving centre (ARC); the customer's representative; service users; and the maintenance organization.

Key drivers for this new British Standard were the findings of Regulation 28 (Report to Prevent Future Deaths)¹, and the need for early involvement and liaison with the ARC to ensure that systems are connected using compliant, agreed and tested communication methods, including the correct system, unit and peripheral device identification.

As with any multi-stakeholder project, early engagement, clear roles and responsibilities, capture of the criteria for success, the needs and constraints, coupled with clear, timely and targeted communication across the project, are all key to a successful outcome and satisfied stakeholders.

1 Scope

This part of BS 8604 gives recommendations and guidance for the design, installation, configuration, commissioning and maintenance of social alarm systems with shared social alarm infrastructure in specialized grouped living environments, to optimize the integrity and reliability of onsite and offsite communications.

This part of BS 8604 does not apply to individual dispersed alarms with no shared infrastructure.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document². For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[BS 5839-6](#), *Fire detection and fire alarm systems for buildings – Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises*

[BS 7671](#), *Requirements for Electrical Installations – IET Wiring Regulations*

[BS EN 50134](#) (all parts), *Alarm systems – Social alarm systems*³

BS EN 50244, *Electrical apparatus for the detection of combustible gases in domestic premises – Guide on the selection, installation, use and maintenance*

¹ <https://www.judiciary.uk/subject/community-health-care-and-emergency-services-related-deaths/>

² Documents that are referred to solely in an informative manner are listed in the Bibliography.

³ This part of BS 8604 also gives dated normative references to BS EN 50134-1:2002, BS EN 50134-2:2017 and BS EN 50134-3:2012, and dated informative references to BS 5839-6:2019 and BS EN 50134-7:2017.

BS EN 50288-1, *Multi-element metallic cables used in analogue and digital communication and control – Part 1: Generic specification*

BS EN 50292, *Electrical apparatus for the detection of carbon monoxide in domestic premises, caravans and boats – Guide on the selection, installation, use and maintenance*

3 Terms and definitions

For the purposes of this part of BS 8604, the following terms and definitions apply.

3.1 alarm call

signal transmitted by the controller to an alarm receiving centre (or on-site staff) to indicate an alarm condition or a fault condition

[SOURCE: BS EN 50134-7:2017, 3.13, modified – on-site staff added]

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

[SOURCE: BS EN 50134-1:2002, 3.2]

3.3 alarm recipient

person who receives and acts upon an alarm signal

[SOURCE: BS EN 50134-1:2002, 3.14]

3.4 alarm transmission path (ATP)

route an alarm message travels between an individual alarm system and its associated annunciation equipment

NOTE The ATP starts at the interface between alarm system and supervised premises transceiver and ends at the interface between receiving centre transceiver and annunciation equipment. For notification and surveillance purposes the reverse direction may also be used.

[SOURCE: BS EN 50136-1:2012+A1, 4.1.5]

3.5 alarm transmission system (ATS)

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

[SOURCE: BS EN 50134-1:2002, 3.7]

3.6 alarm triggering signal

signal transmitted by a trigger device to indicate an alarm

[SOURCE: BS EN 50134-1:2002, 3.13]

3.7 annunciation equipment (AE)

equipment located at an ARC which secures and displays the alarm status, or the changed alarm status of alarm systems in response to receipt of incoming alarms before sending a confirmation

[SOURCE: BS EN 50136-1:2012+A1, 4.1.12]

3.8 controller

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

[SOURCE: BS EN 50134-1:2002, 3.3]

3.9 design document

document prepared by a competent organization in response to the customer's operational ISO requirements

3.10 fire detection and fire alarm panel

control and indicating equipment for a fire detection and fire alarm system

3.11 fixed trigger device

trigger device in a fixed position

[SOURCE: BS EN 50134-2:2017, 3.5]

3.12 grouped living system

social alarm system designed to support multiple service users in a specialized grouped living environment (3.21), using a shared social alarm infrastructure (e.g. shared transmission path and/or shared interconnections)

NOTE This does not include combined local unit and controllers installed directly to an alarm transmission system which they do not share with another local unit and controller.

3.13 interconnections

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

[SOURCE: BS EN 50134-5:2004, 3.1.6]

3.14 local unit

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

[SOURCE: BS EN 50134-1:2002, 3.3]

3.15 normal condition

condition during which the system is fully operational and not in any other condition, i.e. not in the alarm condition or fault condition

[SOURCE: BS EN 50134-1:2002, 3.10, modified – clarification added and pre-alarm condition removed]

3.16 operational requirements

document prepared by or on behalf of the customer detailing the customer's requirements for the social alarm system

3.17 personal receiver

system part which provides two-way speech communication and facilities for identifying and acknowledging the alarm

[SOURCE: BS EN 50134-1:2002, 3.6]

3.18 portable trigger device

trigger device carried or worn by the service user

3.19 service user

person living in a specialized grouped living environment, for whom a social alarm system is designed in order to help them live independently

3.20 social alarm system

system providing 24 h facilities for alarm triggering, identification, signal transmission, alarm reception, two-way speech communication, reassurance and assistance

[SOURCE: BS EN 50134-1:2002, 3.1, modified – text omitted at end]

3.21 specialized grouped living environment

accommodation that provides independent living for occupants who are wholly or mainly limited to a specific section of population and who are likely to require additional measures to secure their safety and wellbeing, including but not limited to accommodation provided for elderly people, children and people with a physical or mental impairment

NOTE Such environments are distinct from a nursing home or residential care home in that the residents are usually able to look after themselves, or require limited personal support, are active and are afforded a degree of independence.

3.22 trigger device

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

[SOURCE: BS EN 50134-1:2002, 3.5]

3.23 variation

intentional departure from a specific recommendation of this part of BS 8604

NOTE 1 Since this part of BS 8604 is a code of practice, its contents take the form of recommendations, rather than requirements. Accordingly, variations might be appropriate in certain circumstances.

NOTE 2 Variations do not include errors in design, installation or commissioning.

NOTE 3 In many cases, variations will need the agreement of interested third parties.

4 Roles and responsibilities

There should be early engagement with all stakeholders, defining their criteria for success, their needs and constraints, coupled with clear, timely and targeted communication across the project, in order to achieve a successful outcome.

This early engagement should include identifying those stakeholders who are to be involved in the design, installation, configuration, commissioning and maintenance of social alarm systems, and those who need to be considered within the design process. Stakeholders should have a specific, agreed, assigned role and responsibilities in how the works are undertaken.

NOTE Stakeholders could include the following:

- a) the customer;
- b) the customer representative;
- c) the designer;
- d) the installer;
- e) the commissioning organization;
- f) the ARC;

- g) the maintainer;
- h) emergency services;
- i) assistance responders;
- j) the service user (generic).

If the social alarm system incorporates fire detection which forms part of the fire strategy for the specialized grouped living environment, the responsible person and/or fire risk assessor will also be a stakeholder.

A stakeholder might be an individual, an individual organization or multiple organizations. Further information on the responsibilities of stakeholders is given in [Annex A](#).

5 Design

COMMENTARY ON CLAUSE 5

*The design of a social alarm system starts with a risk assessment. The fact that a social alarm system is being considered is in itself the start of the risk assessment process. The system needs to take into account the ability of the persons it is designed to support and protect, and the required response for a particular circumstance. In order to maximize the cost-benefit of a system, it is essential that the system design be appropriate to the risk. Accordingly, the design of any social alarm system needs to be based on a good understanding of risk in the particular type of specialized housing for which it is designed. Guidance on this risk can be found in the NFCC publication *Fire safety in specialised housing* [1] and the LGA guide *Fire safety in purpose-built blocks of flats* [2]. Where the social alarm system incorporates life-critical triggers such as smoke alarms, there is a need for high reliability on the part of the system to operate correctly when required; a lower risk might not justify the cost, complexity and extent of a social alarm system with additional sensors.*

It is therefore essential that the design of the system takes into account the needs of the customer, ranging from simple single point call systems to complex systems incorporating multiple manually operated user triggers, automatically operated environmental and activity monitoring triggers, and auxiliary interfaces into third-party systems and equipment, for example door access capability and/or links (both inputs and outputs) to/from fire detection and fire alarm panels.

The successful design operation of the social alarm system in part relies on a detailed understanding of the identified needs of the customer and end user.

Subclause 5.1 is intended to guide the customer in the development of the specification of requirements; the completion of this is a key component in the successful design, installation and handover of the delivered system.

5.1 Operational requirements specification

The customer should provide the designer with an operational requirements specification for the system(s), which should include as a minimum:

- a) whether the works are for replacement or extension of an existing system or first-time installation of a system;
- b) where the works are for replacement or extension of an existing system, the make and model of that system (where known);

NOTE 1 Where installation is being carried out during a refurbishment, attention is drawn to the Control of Asbestos Regulations 2012 [3].

- c) number of residential units to be served by the social alarm system;
- d) number, types and location of trigger device to be installed in each residential unit;

NOTE 2 BS 5839-6:2019 recommends that fire detection in individual residential units is Category LD1 for new build and Category LD2 for refurbishments.

- e) number of units and locations within communal areas to be served by the social alarm system. As a minimum there should be a device in any location where an individual might typically find themselves alone and/or need to summon assistance (e.g. laundry rooms, bin rooms, toilets);
- f) number and types of trigger device to be installed in each communal area;

NOTE 3 BS EN 50134-1:2002 specifies the minimum composition of a social alarm system as comprising:

- manually activated trigger device;
- local unit;
- controller;
- alarm transmission system;
- ARC.

- g) any need for a simultaneous “call-all” facility;

NOTE 4 This is not the same as a general alarm for fire alarm notification.

- h) details of any actuators that are to be connected to and operated by the system, e.g. door entry systems and remotely operable key safes;
- i) specific service user needs that require to be accommodated, e.g. visual or hearing impairment or poor manual dexterity;

NOTE 5 Requirements for fire and smoke alarm systems for Deaf and hard of hearing people are given in BS 5446-3.

- j) the number and types of personal receivers to be provided (e.g. fixed or portable handsets or devices);

NOTE 6 Personal receivers are used on site by alarm recipients.

- k) details of the current alarm transmission system(s) and, where different, details of the alarm transmission system(s) to be used for the new installation;

NOTE 7 It is anticipated that analogue telephone services will cease to be provided within 5 to 10 years of initial publication of this part of BS 8604, as the UK's telecoms infrastructure is upgraded to digital connectivity. This shift brings a number of opportunities to improve the speed and flexibility of alarm transmission, but in addition has major implications for existing alarm systems that rely on the alarm signal to be transmitted to an ARC or other alarm recipient. Grouped living systems that employ analogue connectivity will need to be upgraded, adapted or replaced to ensure that signalling equipment operates correctly. There is a risk that service users could lose the utility of the technology on which they rely for their safety and wellbeing. Stakeholders need to ensure that a process is in place to confirm that equipment is compatible with the changes and that testing protocols are in place to verify that signalling is not compromised.

- l) preferred arrangements for direction of alarm signals during periods when care or support staff are present at the specialized grouped living environment, i.e.:
 - 1) transmission of signals to a personal receiver device;
 - 2) where more than one personal receiver device is deployed, whether signals will be transmitted simultaneously to all devices or some other specified arrangement;
 - 3) any requirement for a hold-on-site period and its duration before signals are transmitted to the ARC. For alarm triggering signals from fire detectors, the hold-on-site period before signals are transmitted to the ARC should be not more than 30 s;