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BSI Standards Publication

**Design, installation and configuration
of intruder and hold-up alarm systems
designed to generate confirmed alarm
conditions — Code of practice**

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Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 June 2021. It was prepared by Subcommittee GW/1/2, *Installed alarm systems*, 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 the committee manager.

Supersession

This British Standard supersedes BS 8243:2010+A1:2014, which will be withdrawn on 30 June 2022.

Relationship with other publications

This British Standard is intended to be read in conjunction with BS EN 50131 (all parts) as implemented by PD 6662.

Information about this document

This is a full revision of the standard and introduces the following principal changes:

- the previous provision for all intruder and hold-up alarm systems (I&HAS) to include sequential confirmation is now optional;
- removal of a number of prescriptive methods from [Clause 5](#) that set recommendations for the design of audio or visual confirmation;
- removal of the provision to declare to the response authority when using detectors incorporating two movement detectors of the same technology within a single housing;
- confirmation of hold-up alarm (HUA) by telephone call back by an alarm receiving centre (ARC) is now permitted only for residential premises;
- confirmation procedures have changed to accommodate the different processes relating to sequential confirmation or where the confirmation status is decided at an ARC;
- removal of Clause 7, which is to be included in an ARC standard, BS 9518; and
- addition of an option to set/unset the intruder alarm system (IAS) using a remote device.

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Users may substitute any of the recommendations in this British Standard with practices of equivalent or better outcome. Any user claiming compliance with this British Standard 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.

The word “should” is used to express recommendations of this standard. The word “may” is used in the text to express permissibility, e.g. as an alternative to the primary recommendation of the clause. The word “can” is used to express possibility, e.g. a consequence of an action or an event.

Notes and commentaries are provided throughout the text of this standard. Notes give references and additional information that are important but do not form part of the recommendations. Commentaries give background information.

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

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1 Scope

This British Standard gives recommendations for the design, installation and configuration of intruder and hold-up alarm systems (I&HAS) that incorporate alarm confirmation technology, where such I&HAS have signalling systems that signal to an alarm receiving centre (ARC) and require a police response.

It includes recommendations intended to minimize the likelihood of false alarms.

NOTE 1 Hold-up alarm system (HAS) alarm confirmation can be used as required in the NPCC and ACPOS/PS security systems policies [1] [2].

NOTE 2 Confirmation of a hold-up alarm (HUA) might be required to regain police response only where the URN (unique reference number) has been withdrawn following false alarms. See the NPCC and ACPOS/PS policies [1] [2].

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 document.¹⁾ For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN 50131 (all parts), *Alarm systems – Intrusion and hold-up systems*

BS EN 50131-1, *Alarm systems – Intrusion and hold-up systems – Part 1: System requirements*²⁾

BS EN 50131-3, *Alarm systems – Intrusion and hold-up systems – Part 3: Control and indication equipment*³⁾

BS EN 50136 (all parts), *Alarm systems – Alarm transmission systems and equipment*

DD CLC/TS 50131-7, *Alarm systems – Intrusion and hold-up systems – Part 7: Application guidelines*⁴⁾

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this British Standard, the terms and definitions given in BS EN 50131 (all parts) and BS EN 50136 (all parts) and the following apply.

3.1.1 alarm filtering

procedure whereby remotely notified alarm conditions are intentionally held at an ARC and their status reviewed for the purpose of cancelling certain alarm conditions, where such cancellation is authorized by the client

3.1.2 alarm receiving centre (ARC)

continuously manned centre to which information concerning the status of one or more I&HAS is reported

3.1.3 alarm signal

signal which, upon being received at an ARC, or upon being received and processed at an ARC, identifies a remotely notified alarm condition

¹⁾ Documents that are referred to solely in an informative manner are listed in the Bibliography.

²⁾ This standard also gives an informative reference to BS EN 50131-1:2006+A3:2020.

³⁾ This standard also gives an informative reference to BS EN 50131-3:2009.

⁴⁾ This standard also gives an informative reference to DD CLC/TS 50131-7:2010.

3.1.4 ancillary control equipment (ACE)

equipment used for supplementary control purposes

3.1.5 as-fitted document

document in which details of the I&HAS actually installed are recorded

3.1.6 audibly confirmed

designation at an ARC given by interpreting audio information received from the supervised premises and determining that there is a high probability that a genuine alarm has occurred

3.1.7 audio listening device (ALD)

component for converting sound waves into electrical energy variations for subsequent re-conversion into sound waves

NOTE A microphone is an example of an ALD.

3.1.8 audio monitoring device (AMD)

component which is activated by sounds above a specific threshold

NOTE Typically, an AMD would incorporate a microphone.

3.1.9 client

person or organization purchasing the I&HAS and/or other alarm services from an alarm company and/or ARC

3.1.10 confirmation time

time allowed for a sequentially confirmed alarm to occur after an unconfirmed alarm has occurred

3.1.11 confirmed alarm

condition that follows after two independent actions or signals have been generated from an audible, visual or sequential source confirming that there is or has been a high probability that a genuine alarm has occurred

3.1.12 control and indicating equipment (CIE)

equipment for receiving, processing, controlling, indicating and initiating the onward transmission of information

3.1.13 digital key

device used for setting and/or unsetting an IAS which can be removed from the supervised premises

NOTE Formerly known as "portable ACE" or "PACE".

3.1.14 digital key reader

fixed equipment which enables an IAS to be unset using a digital key and which is incorporated within CIE, or ACE, or is a separate item or subsystem to provide the required functionality

3.1.15 dual technology movement detector

detection device that employs two different sensing technologies monitored by a common processor with a common alarm output

3.1.16 duress

notification of an alarm condition resulting from a discreet user action during unsettling without use of a hold-up device (HD) (e.g. a special code), specifically intended for use when the user is under coercion

3.1.17 extended format reporting

notification to an alarm transmission system of which specific parts of an I&HAS have activated, generally in circuit, zone or area format

3.1.18 false alarm

policed alarm condition other than a genuine alarm

3.1.19 final exit door

door designated for exit from the supervised premises

3.1.20 genuine alarm

policed alarm condition which has resulted from:

- a) a criminal attack, or attempt at such, upon/to the supervised premises, the alarm equipment or the transmission path carrying the alarm signal; or
- b) actions by emergency services in the execution of their duties; or
- c) a call emanating from a hold-up alarm (HUA) system made with good intent

3.1.21 imaging device

device that converts an optical image into an electrical signal

NOTE A camera is an example of an imaging device.

3.1.22 initial entry door

door designated for entry to the supervised premises

3.1.23 listen-in

action, by an ARC, of listening to stored audio and/or to live audio received from the supervised premises

3.1.24 mis-operation signal

signal that is identifiable at the ARC as indicating that the I&HAS has mis-operated and therefore that the remotely notified alarm condition is to be cancelled

NOTE The designation of a particular type of signal as a mis-operation signal is a matter for agreement between the alarm company and ARC, with the concurrence of the client.

3.1.25 multi-action HD

device capable of sending two or more unambiguous signals or messages to the CIE as a result of two or more different methods of operation

NOTE An example of a different method of operation could be the simultaneous push of two buttons to create an unconfirmed alarm followed by holding in the same two buttons a second time for a pre-determined period to create a confirmed alarm.

3.1.26 notification

passing of an alarm, tamper or fault condition to WDs and/or alarm transmission systems

3.1.27 remote device

type of remote non-I&HAS interface including the capability for the user to set and unset an IAS

3.1.28 remotely notified alarm condition

state of monitoring equipment at an ARC, which indicates an alarm condition

NOTE This does not preclude other signals (e.g. unset, set, mis-operation, fault) being received at an ARC.

3.1.29 restore

procedure of cancelling an alarm, tamper, fault or other condition and returning the I&HAS to a previous condition

3.1.30 sequentially confirmed

condition emanating from two or more independent detectors, which are configured such that there is a high probability that a genuine intrusion or a genuine attempted intrusion has occurred

3.1.31 shunt lock

door lock incorporating a switching device within the lock case

3.1.32 stored audio

recording(s) in an audible format made at a supervised premises during, before and after the time of an alarm condition

3.1.33 supervised premises

part of a building and/or area in which an intrusion, attempted intrusion or the triggering of a HD can be detected by an I&HAS

3.1.34 system design proposal

specification document for a proposed I&HAS, listing the equipment and components to be supplied, detailing their proposed locations and containing a general indication of their coverage or purpose

3.1.35 tamper detection

detection of deliberate interference with an I&HAS or part thereof

3.1.36 transmission fault signal

indication of a fault in the alarm transmission path

3.1.37 unconfirmed alarm

signal that has not been designated as audibly confirmed, visually confirmed or sequentially confirmed

3.1.38 user

person authorized to operate an I&HAS

NOTE The client (subscriber) can also be a user.

3.1.39 video monitoring device (VMD)

component that is activated by disturbances above a specific threshold

NOTE Typically, a VMD would be incorporated into an imaging device.

3.1.40 visually confirmed

designation by an ARC given by interpreting visual information received from the supervised premises and determining that there is a high probability that a genuine alarm has occurred

3.2 Abbreviated terms

For the purposes of this British Standard the following abbreviated terms apply.

ACE	ancillary control equipment
ALD	audio listening device
AMD	audio monitoring device
ARC	alarm receiving centre
ATS	alarm transmission system
CIE	control and indicating equipment
HAS	hold-up alarm system
HD	hold-up device
HUA	hold-up alarm
I&HAS	intruder and hold-up alarm system
IAS	intruder alarm system
PIN	personal identification number
VMD	video monitoring device
WD	warning device

4 Primary design and configuration objectives

4.1 Design objectives

4.1.1 General

Alarm companies should advise clients to consult with interested parties (e.g. insurers) in relation to any new I&HAS, or modification of an existing I&HAS, conforming to this British Standard.

The recommendations in [Annex A](#) should be followed for products used for confirmed I&HAS.

4.1.2 Design objectives for intruder and hold-up alarm systems (I&HAS)

The I&HAS should be designed, installed and configured in accordance with the recommendations given in this British Standard to:

- a) provide effective confirmation facility; and
- b) minimize the likelihood of false alarms (see [Clause 6](#)).

IAS incorporating alarm confirmation technology should be designed, installed and configured in accordance with [Clause 5](#).

4.2 Alarm confirmation technology

COMMENTARY ON 4.2

Alarm confirmation technology aims to provide high confidence that an alarm signal has been caused by a genuine or attempted intrusion alarm or HUA.

Alarm signals can be confirmed in a number of ways but, typically, they fall into two categories:

- a) confirmed by the CIE, e.g. by processing sequential alarms; or*
- b) confirmed by an ARC or ARC operator, e.g. by listening, talking and/or viewing.*

Where confirmation is determined by an operator, there might be an element of subjectivity surrounding what is heard or seen. In these circumstances, the operator is advised not to call the emergency services unless there is positive evidence of crime in progress.

4.2.1 Intruder alarm systems (IAS)

The IAS should incorporate one or a combination of the following forms of confirmation technology:

- a) sequential confirmation technology (see [5.2](#));
- b) audio confirmation technology (see [5.3](#)); or
- c) visual confirmation technology (see [5.4](#)).

4.2.2 Hold-up alarm systems (HAS)

Where confirmation of a HUA is required, one or a combination of the following alarm confirmation technologies should be incorporated:

- a) sequential confirmation (see [5.2](#));
- b) audio confirmation (see [5.3](#));
- c) visual confirmation (see [5.4](#)); or
- d) telephone confirmation (call back) (see [5.5](#)).

An explanation of the selected combinations should be provided to the user/client.

The installer should obtain written confirmation of the client/user's acceptance of the chosen option, and detail how the confirmation works.

NOTE Confirmation of a HUA is not mandatory unless restoration of police response is required following false activations (see NPCC and ACPOS/PS security systems policies [\[1\]](#) [\[2\]](#)).

4.3 Transmission fault signals handled by the ARC

COMMENTARY ON 4.3

The ARC treats the following two circumstances, involving transmission fault signals, as confirmed alarms as there is likely to be high confidence that it is a genuine alarm:

- a) if an ARC receives a transmission fault signal followed by an alarm/tamper signal, or an alarm/tamper signal followed by a transmission fault from the same supervised premises during a single set period of up to a maximum of 96 h;*
- b) for systems with more than one transmission path, a failure of all paths that occur within the same single set period of up to a maximum of 96 h.*

The combination of a transmission fault signal and a HUA condition is interpreted as a confirmed HUA.

Connection to multiple transmission paths is optional and by agreement with the client.

See example procedures in [Annex B](#) and [Annex C](#).