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Alarm systems - Intrusion and hold-up systems - Part 11: Hold-up devices

Alarmanlagen - Einbruch- und Überfallmeldeanlagen - Teil 11: Anforderungen an Überfallmelder

Systèmes d'alarme - Systèmes d'alarme contre l'intrusion et les hold-up - Partie 11: Exigences pour bouton anti-agression

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Systèmes d'alarme - Systèmes d'alarme contre l'intrusion et les hold-up - Partie 11: Exigences pour bouton anti-agression

Alarmanlagen - Einbruch- und Überfallmeldeanlagen - Teil 11: Anforderungen an Überfallmelder

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CENELEC

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Foreword

This document (CLC/TS 50131-11:2012) has been prepared by CLC/TC 79 "Alarm systems".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Introduction

This document is a Technical Specification for hold-up devices which can be used as part of intrusion and hold-up alarm systems installed in buildings. It includes four security grades and four environmental classes.

The purpose of a hold-up device is to allow a person to deliberately generate hold-up alarm signals or messages and a further necessary range of signals or messages to be used by the rest of the intrusion and hold-up alarm system.

The number and scope of these signals or messages will be more comprehensive for systems that are specified at the higher grades.

This Technical Specification is only concerned with the requirements and tests for the hold-up device.

1 Scope

This Technical Specification is for dedicated hold-up devices in buildings, e.g. deliberately operated hold-up devices which can be triggered to create a hold-up alarm signal or message. It provides four security Grades 1-4 (see EN 50131-1), specific or non specific wired or wire-free hold-up devices and uses Environmental Classes I-IV (see EN 50130-5).

This Technical Specification does not include requirements for hold-up devices intended for use outdoors, or for mobile hold-up devices or for devices with functions additional to hold-up facility.

NOTE If a device provides functions additional to hold-up facility, it is recommended to function similar to the requirement described in this Technical Specification.

Functions additional to the mandatory functions as specified in this Technical Specification may be included in the hold-up device, providing they do not adversely influence the correct operation of the mandatory functions.

This Technical Specification does not apply to system interconnections.

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, *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*

EN 50130-5, *Alarm systems – Part 5: Environmental test methods*

EN 50131-1:2006 + A1:2009, *Alarm systems – Intrusion systems and hold-up systems – Part 1: System requirements*

EN 60068-1:1994, *Environmental testing – Part 1: General and guidance (IEC 60068-1:1988 + corrigendum Oct. 1988 + A1:1992)*

EN 60068-2-52, *Environmental testing – Part 2: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution) (IEC 60068-2-52)*

EN 60404-5, *Magnetic materials – Part 5: Permanent magnet (magnetically hard) materials – Methods of measurement of magnetic properties (IEC 60404-5)*

EN 60404-14, *Magnetic materials – Part 14: Methods of measurement of the magnetic dipole moment of a ferromagnetic material specimen by the withdrawal or rotation method (IEC 60404-14)*

EN 61672-1:2003, *Electroacoustics – Sound level meters – Part 1 : Specifications (IEC 61672-1:2002)*

IEC 60404-8-1, *Magnetic materials – Part 8-1: Specifications for individual materials – Magnetically hard materials*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 50131-1:2006 + A1:2009 and the following apply.

3.1.1
basic activation test
operational test during which a hold-up device is activated by using the standard triggering method in a controlled environment

3.1.2
hand operated devices
button, lever or strip operated hold-up devices, in which the hold-up trigger is activated by pressing one or more button(s) or strip(s) or by pulling one or more lever(s), and the operation is intended to be performed manually by hand

3.1.3
hold-up trigger
event which generates a hold-up signal or message when a hold-up device is activated by using the standard triggering method

3.1.4
incorrect operation
physical condition that causes an inappropriate signal or message from a hold-up device

3.1.5
kick / tilt & long bar operated devices
hold-up devices in which the hold-up trigger is activated by pressing or lifting a floor or desk mounted component, and the operation is intended to be performed manually by foot or knee

3.1.6
latching device
device that, following its operation, remains in the operated condition until reset before a further trigger operation can be performed

3.1.7
masking
interference with the hold-up device input capability which prohibits the triggering of the hold-up device e.g. controlling a reed switch based detection element by a separate magnet

3.1.8
money clip operated devices
hold-up devices in which the hold-up trigger is activated by deliberate removal of a banknote for trigger activation

3.1.9
multi action devices
one or more component(s) of a hold-up devices capable of sending two or more hold-up trigger as a result of two or more different methods of operation for verification purpose, whenever a verification is required / applicable

EXAMPLE An example of different methods of operation could be the simultaneous push of two buttons to create an unconfirmed hold-up trigger release the buttons, followed by a simultaneous push and holding in the same buttons a second time for a predetermined period to create a confirmed hold-up trigger.

3.1.10
non-latching device
device that, following its operation and after removal of the operating force(s), returns to its original state and is able to generate further hold-up triggers when operated

3.1.11
operating member
component of an operating part requiring a specifically applied force or action to allow the activation of the operating part

EXAMPLE One button of a hold-up device with two buttons, so each individual button will be an operating member.

3.1.12
operating part
deliberately operated part of a hold-up device requiring a specifically applied force to generate a hold-up trigger when all required operating members are activated

EXAMPLE A hold-up device with two buttons, in which both buttons form an operating part and each individual button will be an operating member.

3.2 Abbreviations

For the purposes of this document, the following abbreviations apply.

BAT Basic Activation Test

CIE Control & Indicating Equipment

EMC Electro Magnetic Compatibility

4 Functional requirements

4.1 General

A hold-up device shall fulfil all the requirements of the specified grade.

The functional requirements described in this clause shall cover the following types of hold-up devices, which shall be tested towards the requirements according to the test methods described in Clause 6:

– hand operated hold-up devices (intended to be triggered by hand);

– kick / tilt & Long bar – Hold-up device (intended to be triggered via foot, knee);

– money clip contact – Hold-up device (intended to be triggered when a banknote is withdrawn).

4.2 Event processing

Hold-up devices shall process the events shown in Table 1. Hold-up devices shall generate signals or messages as shown in Table 2.

Table 1 — Events to be processed and functions to be provided by grade

Event	Grade			
	1	2	3	4
Hold-up trigger	M	M	M	M
Tamper detection	Op	M	M	M
Masking detection	Op	Op	M	M
Removal from the mounting surface [a]	Op	M	M	M
Low supply voltage [b]	Op	Op	Op	M
Total loss of power supply [b]	Op	M	M	M
Local self test [c]	Op	Op	M	M
Remote self test	Op	Op	Op	M

Key
M = Mandatory, Op = Optional

[a] Mandatory for wire-free at grades 2, 3 and 4; mandatory for all surface mounted grade 4 types. Optional for wired surface mounted grades 1, 2 and 3. Optional for wired flush mount hold-up devices.

[b] Mandatory for wire-free at all grades. Only required if power is required for normal local operation, e.g. purely micro or reed switch based solutions do not fall under this requirement. No generation of a message or signal is required when the condition is detected by the CIE due to system design, e.g. bus based systems.

[c] Mandatory for grade 4. For grade 3 only required if software or firmware based signal processing is used to generate any signal or message, e.g. purely micro switch or reed switch based solutions or solutions which are based on analogue electronic design, do not fall under this requirement. No generation of a message or signal is required when the condition is detected by the CIE due to system design, e.g. bus based systems.

Table 2 — Generation of signals or messages

Event	Signals or Messages		
	Hold-up	Tamper	Fault
No event	NP	NP	NP
Hold-up trigger	M	NP	NP
Tamper	NP	M	NP
Masking [a]	NP	M	M
Removal from the mounting surface	NP	M	NP
Low supply voltage	NP	Op	M
Total loss of power supply [b]	NP	M	Op
Local self test pass	NP	NP	NP
Local self test fail	NP	NP	M
Remote self test pass	NP	M	NP
Remote self test fail	NP	NP	M
Key M = Mandatory, NP = Not Permitted, Op = Optional			
When, in Table 1, an event may optionally generate signals or messages, they shall be as shown in this table. This permits two methods of signalling a masking event: either by the tamper signal and fault signal, or by a dedicated masking signal or message. Use of the tamper signal and fault signal is preferable, as this requires fewer connections between CIE and hold-up device. If multiple events overlap there will be some signal combinations that may be ambiguous. To overcome this ambiguity it is suggested that hold-up devices should not signal 'tamper' and 'fault' at the same time except to indicate masking. This implies that the hold-up device should prioritise signals, e.g. 1 Tamper, 2 Fault, 3 Masking. It is accepted that a bus system, a bus-based device may send out dedicated signals or messages and does not necessarily have to follow the mapping of Table 2 provided that all of the required events are communicated.			
a An independent signal or message may be provided instead. b Alternatively Total loss of Power Supply shall be determined by loss of communication with the hold-up device.			

4.3 Hold-up triggering

4.3.1 Trigger operation

4.3.1.1 General

A hold-up trigger shall be generated when the hold-up device specific trigger mechanism is activated.

Hold-up devices shall include means to minimise the possibility of accidental triggering and fulfil the device specific individual conditions according to the following subclauses.

The requirements, operation and responses of latching and non-latching devices are different.

All relevant trigger activations shall be tested according to the device type as required by the corresponding test in Clause 6.