



BSI Standards Publication

Alarm systems — Intrusion and hold-up systems

Part 2-10: Intrusion detectors —
Lock state contacts (magnetic)

National foreword

This Published Document is the UK implementation of CLC/TS 50131-2-10:2014.

The UK participation in its preparation was entrusted by Technical Committee GW/1, Electronic security systems, to Subcommittee GW/1/1, Alarm components.

A list of organizations represented on this committee can be obtained on request to its secretary.

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

© The British Standards Institution 2014.
Published by BSI Standards Limited 2014

ISBN 978 0 580 82745 7
ICS 13.320

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

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 May 2014.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

TECHNICAL SPECIFICATION
 SPÉCIFICATION TECHNIQUE
 TECHNISCHE SPEZIFIKATION

CLC/TS 50131-2-10

January 2014

ICS 13.320

English version

**Alarm systems -
 Intrusion and hold-up systems -
 Part 2-10: Intrusion detectors -
 Lock state contacts (magnetic)**

Systemes d'alarme -
 Systemes d'alarme contre l'intrusion et les
 hold-up -
 Partie 2-10: Détecteurs d'intrusion -
 Contact d'état de verrouillage
 (magnétique)

Alarmanlagen -
 Einbruch- und Überfallmeldeanlagen -
 Teil 2-10: Einbruchmelder -
 Verschluss- und
 Öffnungsüberwachungskontakte
 (magnetisch)

This Technical Specification was approved by CENELEC on 2013-12-02.

CENELEC members are required to announce the existence of this TS in the same way as for an EN and to make the TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
 Comité Européen de Normalisation Electrotechnique
 Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

Contents

Page

Foreword	4
Introduction.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms, definitions and abbreviations.....	7
3.1 Terms and definitions	7
3.2 Abbreviations.....	8
4 Functional requirements.....	9
4.1 Events.....	9
4.2 Signals or messages.....	9
4.3 Detection	10
4.4 Operational requirements.....	11
4.5 Tamper security.....	11
4.6 Electrical requirements.....	13
4.7 Environmental classification and conditions.....	14
5 Marking, identification and documentation.....	15
5.1 Marking and/or identification	15
5.2 Documentation	15
6 Testing.....	15
6.1 Generalities	15
6.2 General test conditions.....	15
6.3 Basic test of detection capability	16
6.4 Verification of detection performance.....	16
6.5 Switch-on delay, time interval between signals, and indication of detection.....	17
6.6 Tamper security.....	17
6.7 Electrical tests	19
6.8 Environmental classification and conditions.....	20
6.9 Marking, identification and documentation.....	22
Annex A (normative) Dimensions & requirements of standardized interference test magnets.....	23
Annex B (normative) General testing matrix.....	26
Annex C (informative) List of small tools suitable for testing immunity of casing to unauthorised access	27
Annex D (normative) Axes of movement.....	28
Annex F (normative) Test surfaces for ferromagnetic material.....	29
Annex E (normative) Test faces for interference test units.....	30
Bibliography.....	32

Figures

Figure A.1 — Test magnet for surface mount opening magnetic contacts 24
Figure A.2 — Test magnet for flush mount opening magnetic contacts..... 25
Figure D.1 — Flush mount style 28
Figure D.2 — Surface mount style 28
Figure F.1 — Surface mount interference test, interference test unit 30
Figure F.2 — Surface mount interference test, interference test unit / purely magnetic..... 30
Figure F.3 — Flush mount interference test, interference test unit (unshaded), corresponding unit (shaded)..... 31

Tables

Table 1 — Events to be processed and main functions to be provided by grade..... 9
Table 2 — Generation of signals or messages 10
Table 3 — Electrical requirements..... 13
Table 4 — Environmental tests, operational..... 21
Table 5 — Environmental tests, endurance..... 21
Table B.1 — General testing matrix..... 26

Foreword

This document (CLC/TS 50131-2-10:2014) has been prepared by CLC/TC 79 "Alarm systems".

EN 50131-2 is currently composed of the following parts:

- EN 50131-2-2, *Alarm systems — Intrusion and hold-up systems — Part 2-2: Intrusion detectors — Passive infrared detectors*;
- EN 50131-2-3, *Alarm systems — Intrusion and hold-up systems — Part 2-3: Requirements for microwave detectors*;
- EN 50131-2-4, *Alarm systems — Intrusion and hold-up systems — Part 2-4: Requirements for combined passive infrared and microwave detectors*;
- EN 50131-2-5, *Alarm systems — Intrusion and hold-up systems — Part 2-5: Requirements for combined passive infrared and ultrasonic detectors*;
- EN 50131-2-6, *Alarm systems — Intrusion and hold-up systems — Part 2-6: Opening contacts (magnetic)*;
- CLC/TS 50131-2-8, *Alarm systems — Intrusion and hold-up systems — Part 2-8: Intrusion detectors — Shock detectors*;
- CLC/FprTS 50131-2-9, *Alarm systems — Intrusion and hold-up systems — Part 2-9: Intrusion detectors — Active infrared beam detectors*;
- CLC/TS 50131-2-10, *Alarm systems — Intrusion and hold-up systems — Part 2-10: Intrusion detectors — Lock state contact (magnetic)* [the present document];
- EN 50131-2-7-1, *Alarm systems — Intrusion and hold-up systems — Part 2-7-1: Intrusion detectors — Glass break detectors (acoustic)*;
- EN 50131-2-7-2, *Alarm systems — Intrusion and hold-up systems — Part 2-7-2: Intrusion detectors — Glass break detectors (passive)*;
- EN 50131-2-7-3, *Alarm systems — Intrusion and hold-up systems — Part 2-7-3: Intrusion detectors — Glass break detectors (active)*.

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 Technical Specification applies to lock state contacts (magnetic) used as part of intrusion and hold-up alarm systems (I&HAS) installed in buildings. It includes four security grades and four environmental classes.

Lock state contacts are installed in windows or doors and windows or doorframes to allow to monitor the lock/unlock status only or the lock/unlock status combined with the open/close status of a window/door simultaneously and are as such located in supervised premises.

The scope for lock state contacts (magnetic) and the number and types of generated 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 lock state contacts (magnetic). Other types of detectors are covered by other documents identified in the EN 50131 series and in the EN 50131-2 series.

1 Scope

This Technical Specification provides for security grades 1 to 4, (see EN 50131-1) specific or non-specific wired or wire-free lock state contacts, and includes the requirements for four environmental classes covering applications in internal and outdoor locations as specified in EN 50130-5.

The purpose of a lock state contact (magnetic) is to detect the lock/unlock state only or the lock/unlock state combined with the opening status/displacement from the defined closed position of a window or door, simultaneously. The lock state contact comprises two separate contact-less units, the active connection between these units is at least one magnetic or electromagnetic based field. Separating the two units disturbs the connection and produces an intruder signal or message.

A detector will fulfil all the requirements of the specified grade.

Functions additional to the mandatory functions specified in this Technical Specification may be included in the detector, providing they do not influence the correct operation of the mandatory functions.

The combination of the two separate units of the lock state contact is referred to in the body of this Technical Specification as the detector.

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 10130, *Cold rolled low carbon steel flat products for cold forming — Technical delivery conditions*

EN 50130-4, *Alarm systems — Part 4: Electromagnetic compatibility — Product family standard: Immunity requirements for components of fire, intrusion, hold up, CCTV, access control and social alarm systems*

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

EN 50131-1:2006,¹⁾ *Alarm systems — Intrusion and hold-up systems — Part 1: System requirements*

EN 50131-6, *Alarm systems — Intrusion and hold-up systems — Part 6: Power supplies*

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

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)*

1) This document is currently impacted by EN 50131-1:2006/A1:2009.