

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Alarm systems – Intrusion and hold-up systems –
Part 4: Warning devices**

**Systèmes d'alarme – Systèmes d'alarme contre l'intrusion et les hold-up –
Partie 4: Dispositifs d'avertissement**



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2010 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester.

If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de la CEI ou du Comité national de la CEI du pays du demandeur.

Si vous avez des questions sur le copyright de la CEI ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de la CEI de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

- Catalogue of IEC publications: www.iec.ch/searchpub

The IEC on-line Catalogue enables you to search by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, withdrawn and replaced publications.

- IEC Just Published: www.iec.ch/online_news/justpub

Stay up to date on all new IEC publications. Just Published details twice a month all new publications released. Available on-line and also by email.

- Electropedia: www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 20 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary online.

- Customer Service Centre: www.iec.ch/webstore/custserv

If you wish to give us your feedback on this publication or need further assistance, please visit the Customer Service Centre FAQ or contact us:

Email: csc@iec.ch

Tel.: +41 22 919 02 11

Fax: +41 22 919 03 00

A propos de la CEI

La Commission Electrotechnique Internationale (CEI) est la première organisation mondiale qui élabore et publie des normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications CEI

Le contenu technique des publications de la CEI est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

- Catalogue des publications de la CEI: www.iec.ch/searchpub/cur_fut-f.htm

Le Catalogue en-ligne de la CEI vous permet d'effectuer des recherches en utilisant différents critères (numéro de référence, texte, comité d'études,...). Il donne aussi des informations sur les projets et les publications retirées ou remplacées.

- Just Published CEI: www.iec.ch/online_news/justpub

Restez informé sur les nouvelles publications de la CEI. Just Published détaille deux fois par mois les nouvelles publications parues. Disponible en-ligne et aussi par email.

- Electropedia: www.electropedia.org

Le premier dictionnaire en ligne au monde de termes électroniques et électriques. Il contient plus de 20 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans les langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International en ligne.

- Service Clients: www.iec.ch/webstore/custserv/custserv_entry-f.htm

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions, visitez le FAQ du Service clients ou contactez-nous:

Email: csc@iec.ch

Tél.: +41 22 919 02 11

Fax: +41 22 919 03 00



IEC 62642-4

Edition 1.0 2010-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Alarm systems – Intrusion and hold-up systems –
Part 4: Warning devices**

**Systèmes d'alarme – Systèmes d'alarme contre l'intrusion et les hold-up –
Partie 4: Dispositifs d'avertissement**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

W

ICS 13.320

ISBN 978-2-88912-199-1

CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms, definitions and abbreviations	8
3.1 Terms and definitions	8
3.2 Abbreviations	10
4 General considerations.....	10
5 Requirements.....	10
5.1 Functional	10
5.1.1 Response	10
5.1.2 Acoustic	12
5.1.3 Timing	12
5.2 Tamper.....	13
5.2.1 Protection.....	13
5.2.2 Detection.....	13
5.3 Environmental	14
5.4 EMC.....	14
5.5 Safety	14
5.6 Electrical.....	15
5.6.1 Connections	15
5.6.2 Operating parameters.....	15
5.6.3 Self powered	15
5.7 Self test requirements	17
5.7.1 Local self test	17
5.7.2 Remote self test	17
5.8 Marking.....	18
5.9 Documentation	18
6 Test section.....	18
6.1 Functional	18
6.1.1 General conditions	18
6.1.2 General mounting	18
6.1.3 General testing procedures.....	19
6.2 Reduced functional test.....	19
6.2.1 Purpose.....	19
6.2.2 Conditions	19
6.2.3 Mounting	19
6.2.4 Stimuli	19
6.2.5 Measurement.....	19
6.2.6 Pass/fail criteria.....	19
6.3 Response to events.....	19
6.3.1 Response to trigger command	19
6.3.2 Response to loss of trigger command interconnection integrity.....	20
6.3.3 Maximum sound duration limit	20
6.4 Acoustic	21
6.4.1 Acoustic output level	21

6.5	Tamper.....	22
6.5.1	Opening by normal means	22
6.5.2	Protection.....	22
6.5.3	Detection of opening by normal means	23
6.5.4	Detection of removal from mounting	24
6.5.5	Detection of penetration	24
6.6	Electrical tests.....	25
6.6.1	Operating voltage range and current consumption	25
6.6.2	Slow rise of remote power source voltage.....	25
6.6.3	Remote power source voltage step change.....	26
6.6.4	Storage device standby time.....	26
6.6.5	Storage device operating time	27
6.6.6	Storage device recharge rate.....	28
6.6.7	Loss of remote power	28
6.6.8	Remote power short circuit protection.....	29
6.6.9	Storage device monitoring – Low voltage.....	29
6.6.10	Storage device monitoring – Failure	30
6.7	Marking	30
6.7.1	Purpose.....	30
6.7.2	Conditions	31
6.7.3	Mounting	31
6.7.4	Stimuli	31
6.7.5	Measurement.....	31
6.7.6	Pass/fail criteria.....	31
6.8	Documentation	31
6.8.1	Purpose.....	31
6.8.2	Conditions	31
6.8.3	Mounting	31
6.8.4	Stimuli	31
6.8.5	Measurement.....	31
6.8.6	Pass/fail criteria.....	31
6.9	Environmental	31
6.9.1	Impact	31
6.9.2	Further environmental tests	32
Annex A	(normative) Sound level test for warning devices	34
Annex B	(informative) Example remote test protocol	37
Bibliography		38
Figure A.1	– Suggested method of mounting.....	35
Figure A.2	– Measurement positions – Surface mounted devices	36
Figure A.3	– Measurement positions – Pole mounted devices	36
Table 1	– Warning device functionality.....	11
Table 2	– Warning device responses	11
Table 3	– Acoustic output levels	12
Table 4	– Enclosure construction	13
Table 5	– Tool dimension for tamper detection.....	13

Table 6 – Tamper detection	14
Table 7 – Removal from mounting.....	14
Table 8 – Storage device standby duration	16
Table 9 – Recharge periods	16
Table 10 – Self test monitoring	17
Table 11 – Environmental tests selection	33

This document is a preview generated by EVS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ALARM SYSTEMS – INTRUSION AND HOLD-UP SYSTEMS –

Part 4: Warning devices

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62642-4 has been prepared by IEC technical committee 79: Alarm and electronic security systems.

This standard is based on EN 50131-4 (2009).

The text of this standard is based on the following documents:

FDIS	Report on voting
79/308/FDIS	79/319/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62642 series can be found, under the general title *Alarm systems – Intrusion and hold-up systems*, on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

This part 4 of the IEC 62642 series of standard gives requirements for warning devices used in intrusion and hold-up alarm systems. The other parts of this series of standards are as follows:

- Part 1 System requirements
- Part 2-2 Intrusion detectors – Passive infrared detectors
- Part 2-3 Intrusion detectors – Microwave detectors
- Part 2-4 Intrusion detectors – Combined passive infrared / microwave detectors
- Part 2-5 Intrusion detectors – Combined passive infrared / ultrasonic detectors
- Part 2-6 Intrusion detectors – Opening contacts (magnetic)
- Part 2-71 Intrusion detectors – Glass break detectors – Acoustic
- Part 2-72 Intrusion detectors – Glass break detectors – Passive
- Part 2-73 Intrusion detectors – Glass break detectors – Active
- Part 3 Control and indicating equipment
- Part 4 Warning devices
- Part 5-3 Interconnections – Requirements for equipment using radio frequency techniques
- Part 6 Power supplies
- Part 7 Application guidelines
- Part 8 Security fog devices/systems

ALARM SYSTEMS – INTRUSION AND HOLD-UP SYSTEMS –

Part 4: Warning devices

1 Scope

This part of the IEC 62642 includes requirements for warning devices used for notification in intrusion and hold up alarm systems installed in buildings. Four grades of warning device are described corresponding to each of the four security grades given in IEC 62642-1. Requirements are also given for four environmental classes covering applications in internal and outdoor locations as specified in IEC 62599-1.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60065, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60950-1, *Information technology equipment – Safety – Part 1: General requirements*

IEC 61000-6-3, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments*

IEC 61672-1, *Electroacoustics – Sound level meters – Part 1: Specifications*

IEC 62599-1, *Alarm systems – Part 1: Environmental test methods*

IEC 62599-2, *Alarm systems – Part 2: Electromagnetic compatibility – Immunity requirements for components of fire and security alarm systems*

IEC 62642-1, *Alarm systems – Intrusion and hold-up systems – Part 1: System requirements*

IEC 62642-6, *Alarm systems – Intrusion and hold-up systems – Part 6: Power supplies¹*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

¹ Under preparation.