

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Sound signalling devices for household and similar purposes

Dispositifs de signalisation sonore pour usage domestique et analogue

Document Preview

[IEC 62080:2001](#)

<https://standards.iteh.ai/catalog/standards/iec/8dab8b90-3341-49d2-9bde-567b66263b3f/iec-62080-2001>



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2009 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 It also gives information on projects, withdrawn and replaced publications.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 62080

Edition 1.1 2009-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Sound signalling devices for household and similar purposes

Dispositifs de signalisation sonore pour usage domestique et analogue

Document Preview

[IEC 62080:2001](#)

<https://standards.iteh.ai/catalog/standards/iec/8dab8b90-3341-49d2-9bde-567b66263b3f/iec-62080-2001>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.120.99

ISBN 978-2-88910-616-5

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references.....	6
3 Definitions	8
4 General requirements	12
5 General notes on tests.....	12
6 Classification	13
7 Marking	14
8 Protection against electric shock.....	17
9 Constructional requirements	17
10 Normal operation	22
11 Temperature rise	23
12 Abnormal conditions	27
13 Resistance to ageing, protection against ingress of solid objects and against harmful ingress of water and to humidity	28
14 Insulation resistance and dielectric strength.....	31
15 Mechanical strength.....	34
16 Resistance to heat.....	39
17 Internal wiring.....	40
18 Components	40
19 Terminals	41
20 Flexible cables and their connection.....	41
21 Provision for earthing.....	47
22 Screws, current-carrying parts and connections	47
23 Creepage distances and clearances.....	49
24 Resistance of insulating material to abnormal heat and to fire	51
25 Resistance to rusting	52
26 EMC requirements	52
Annex A (normative) Electronic devices	64
Annex B (normative) EMC requirements.....	67
Annex C (normative) Measurement of creepage distances and clearances	71
Figure 1 – Examples of different types of screws	55
Figure 2 – Standard test finger	56
Figure 3 - Arrangement for test on covers or cover-plates.....	57
Figure 4 – Gauge (thickness: about 2 mm) for the verification of the outline of covers and cover-plates	57
Figure 5 – Examples of application of the gauge of figure 4 on covers screwlessly fixed on a mounting surface or supporting surface	58

Figure 6 – Examples of application of the gauge of figure 4 in accordance with the requirements.....	59
Figure 7 – Void	60
Figure 8 – Sketch showing the direction of application of the gauge of figure 7	60
Figure 9 – Ball-pressure apparatus.....	61
Figure 10 – Flexing test apparatus	61
Figure 11 – Test pins	62
Figure 12 – Test wall.....	62
Figure 13 – Diagrammatic representation	63
Table 1 – Force to be applied to covers, cover-plates, or actuating members whose fixing are not dependent on screws	19
Table 2 – Torque to be applied to screws and connections	23
Table 3 – Values of maximum temperature rise	26
Table 4 – Temperature limits.....	27
Table 5 – Minimum values of insulation resistance for additive insulation protected devices and earth protected devices.....	31
Table 6 – Minimum values of insulation resistance for installation protected devices	32
Table 7a – Test voltages for devices having a rated voltage not exceeding 130 V	32
Table 7b – Test voltages for devices having a rated voltage exceeding 130 V.....	33
Table 8 – Test voltages	34
Table 9 – Pull force on pins.....	36
Table 10 – Torques for verification of the mechanical resistance of the screwed glands	37
Table 11 – Pull force and torque.....	43
Table 12 – Minimum clearances	50
Table 13a – Creepage distances of basic and supplementary insulation.....	50
Table 13b – Creepage distances of reinforced insulation	50
Table B.1 – Tests requirements and levels according to the family of the device	67

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOUND SIGNALLING DEVICES FOR HOUSEHOLD AND SIMILAR PURPOSES

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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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 62080 has been prepared by Technical Committee 23: Electrical accessories.

This consolidated version of IEC 62080 consists of the first edition (2001) [documents 23/287/FDIS and 23/293/RVD] and its amendment 1 (2008) [documents 23/450/FDIS and 23/457/RVD].

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience.

It bears the edition number 1.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

Annexes A, B and C form an integral part of this standard.

In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.

Words in **bold** are defined in clause 3.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance 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.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[IEC 62080:2001](#)

<https://standards.iteh.ai/catalog/standards/iec/8dab8b90-3341-49d2-9bde-567b66263b3f/iec-62080-2001>

SOUND SIGNALLING DEVICES FOR HOUSEHOLD AND SIMILAR PURPOSES

1 Scope

This International Standard applies to **sound signalling devices** with integral enclosures or to **sound signalling devices** intended to be fitted into or supplied with enclosures according to IEC 60670 intended for household and similar purposes with **rated voltages** not exceeding 250 V a.c. or 250 V d.c. and with rated power inputs not exceeding 100 VA. In these **sound signalling devices** an indicating light having a rated input power not exceeding 10 VA may also be incorporated.

These products are designated as "devices" throughout the remainder of the text.

This standard applies to **fixed, portable and plug-in devices** for indoor or outdoor use.

In locations where special conditions prevail, special constructions may be required.

NOTE 1 This standard or parts of it may be used as a guide for **sound signalling devices** having a voltage less than 50 V a.c. or 75 V d.c. Additional requirements for **sound signalling devices** having a voltage less than 50 V a.c. or 75 V d.c. are under consideration.

NOTE 2 This standard does not cover the radio transmitting or receiving functions.

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 60065:1998, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068-2-32:1975, *Environmental testing – Part 2: Tests. Test Ed: Free fall (Procedure 1)*

IEC 60068-2-75:1997, *Environmental testing – Part 2-75: Tests. Test Eh: Hammer tests*

IEC 60083:1997, *Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC*

IEC 60085:1984, *Thermal evaluation and classification of electrical insulation*

IEC 60112:1979, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions*

IEC 60127 (all parts), *Miniature fuses*

IEC 60212:1971, *Standard conditions for use prior to and during the testing of solid electrical insulating materials*

IEC 60216 (all parts), *Guide for the determination of thermal endurance properties of electrical insulating materials*

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60245 (all parts), *Rubber insulated cables – Rated voltages up to and including 450/750 V*

IEC 60317 (all parts), *Specifications for particular types of winding wires*

IEC 60320 (all parts), *Appliance couplers for household and similar general purposes*

IEC 60384-14:1993, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60417 (all parts), *Graphical symbols for use on equipment*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coatings to achieve insulation coordination of printed board assemblies*

IEC 60670, *General requirements for enclosures for accessories for household and similar fixed-electrical installations*

IEC 60695-2-1 (all sheets) *Fire hazard testing – Part 2: Test methods – Section 1: Glow-wire test and guidance*

IEC 60730 (all parts), *Automatic electrical controls for household and similar use*

IEC 60998 (all parts), *Connecting devices for low-voltage circuits for household and similar purposes*

IEC 61000-2-2:1990, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 2: Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems*

IEC 61000-3-2:2000, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

IEC 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 3: Limitation of voltage fluctuation and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A*

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test. Basic EMC Publication*

IEC 61000-4-3:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test. Basic EMC Publication*

IEC 61000-4-5:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test*

IEC 61000-4-6:1996, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 6: Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-11:1994, *Electromagnetic compatibility (EMC) – Part 4: Testing and measuring techniques – Section 11: Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61558-1:1997, *Safety of power transformers, power supply units and similar – Part 1: General requirements and tests*

CISPR 14 (all parts), *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus*

ISO 1456:1988, *Metallic coatings – Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium*

ISO 2081:1986, *Metallic coatings – Electroplated coatings of zinc on iron or steel*

ISO 2093:1986, *Electroplated coatings of tin – Specification and test methods*

3 Definitions

For the purpose of this International Standard, the following definitions apply.

NOTE Where the terms “voltage” and “current” are used, they imply r.m.s. values unless otherwise specified.

3.1

sound signalling device

electromechanical or electronic device which emits an audible sound when activated

NOTE The activation may be produced by manual or automatic means, and where transmission or the activation signal may be through conductors or by radio or any other transmission means.

3.2

type D device

device where the sound output continues in proportion to the duration of operation of the control

3.3

type R device

3.3.1

type R1 device

device where the first sound note is created by the initial operation of the control and a second note is created on the release of the control

3.3.2

type R2 device

device where the sound output is created by the initial operation of the control and where the period of sound output continues for the designed duration irrespective of the condition of the control

3.4

enclosure

part providing protection of equipment against certain external influences, and in any direction, protection against direct contact

[3.1 of IEC 60529]

3.5

fixed device

device which is intended to be permanently connected to a power supply, and to be used when fastened to a support

NOTE A support may be a permanent part of a building, an appliance, etc.

3.6

portable device

device intended to be connected to, or integral with, flexible cable(s), and which can easily be moved from one place to another while connected to the power supply

3.7**plug-in device**

device provided with plug pins and which relies upon insertion into a socket-outlet for its power supply

3.8**intermittent operation**

sequence of cycles of operation with a specified ON period and specified OFF period

3.9**continuous operation**

operation for an unlimited period

3.10**rated voltage**

voltage assigned to the device by the manufacturer

3.11**rated voltage range**

range of voltages assigned to the device by the manufacturer, expressed by its upper and lower limits

3.12**ELV (extra low voltage)**

voltage supplied from a source within the device which does not exceed 50 V a.c. or 120 V ripple free d.c. between conductors or between conductors or earth when the device is supplied at **rated voltage**

3.13**SELV (safety extra-low voltage)**

voltage not exceeding 50 V a.c. or 120 V ripple free d.c. between conductors or between conductors or earth in a circuit which is isolated from the supply by means such as a safety isolating transformer

NOTE 1 Maximum voltages lower than 50 V a.c. or 120 V ripple free d.c. may be specified in particular situations especially when direct contact with live parts is allowed.

NOTE 2 The voltage limit should not be exceeded at any load between full load and no load when the source is a safety isolating transformer.

NOTE 3 "Ripple free" is an r.m.s ripple voltage of not more than 10 % of the d.c. component.

3.14**rated power input**

power input under normal conditions at normal operating temperature assigned to the device by the manufacturer

3.15**rated current**

current assigned to the device by the manufacturer

3.16**rated frequency**

frequency assigned to the device by the manufacturer

3.17**rated frequency range**

range of frequencies assigned to the device by the manufacturer, expressed by its upper and lower limits

3.18

normal use

use of the device for the purpose for which it was made and/or declared by the manufacturer

3.19

terminal

conductive part of one pole comprising one or more clamping units and insulation if necessary

[3.5 of IEC 60998-1]

3.20

screw-type terminal

terminal for the connection of two or more conductors by means of screw-type clamping units

[3.101 of IEC 60998-2-1]

3.21

pillar terminal

terminal in which the conductors are inserted into a hole or cavity, where they are clamped under the shank of a screw or screws

NOTE The clamping pressure may be applied directly by the shank of the screw or through an intermediate part to which pressure is applied by the shank of the screw.

[3.101.1 of IEC 60998-2-1]

3.22

screw terminal

terminal in which the conductors are clamped under the head of one or more screws

NOTE The clamping pressure may be applied directly by the head of a screw or through an intermediate part, such as a washer, a clamping plate or an anti-spread device.

[3.101.2 of IEC 60998-2-1]

3.23

thread-forming screw

tapping screw having an uninterrupted thread, which by screwing in, forms a thread by displacing material

NOTE An example is shown in figure 1a.

3.24

thread-cutting screw

tapping screw having an interrupted thread, which by screwing in, forms a thread by removing material.

NOTE An example is shown in figure 1b.

3.25

mantle terminal

terminal in which the conductors are clamped against the base of a slot in a threaded stud by means of a nut, by a suitably shaped washer placed under the nut, by a central peg if the nut is a cap nut, or by an equally effective means for transmitting the pressure from the nut to the conductors within the slot

[3.101.5 of IEC 60998-2-1]

3.26

screwless terminal

connecting device for the connection and subsequent disconnection of a rigid (solid or stranded) or flexible conductor or the interconnection of two conductors capable of being dismantled the connection being made directly or indirectly, by means of springs, parts of angled eccentric or conical form, etc., without special preparation of the conductor concerned, other than removal of insulation

3.27**base**

part of the device retaining current-carrying parts and, in general, the mechanism in position

3.28**creepage distance**

shortest distance along the surface of the insulating material between two conductive parts

3.29**clearance**

shortest distance in air between two conductive parts

3.30**accessible parts or surfaces**

parts which can be touched by means of the standard test finger shown in figure 2

3.31**basic insulation**

insulation applied to live parts to provide basic protection against electric shock

NOTE **Basic insulation** does not necessarily include insulation used exclusively for functional purposes.

3.32**supplementary insulation**

independent insulation applied in addition to the **basic insulation** in order to provide protection against electric shock in the event of a failure of the **basic insulation**

3.33**double insulation**

insulation comprising both **basic insulation** and **supplementary insulation**

3.34**reinforced insulation**

single insulation system applied to live parts which provides a degree of protection against electric shock equivalent to **double insulation**

NOTE The term "insulation system" does not imply that the insulation should be one homogeneous piece. It may comprise several layers which cannot be tested singly as **supplementary** or **basic insulation**.

3.35**earth protected device**

device in which protection against electric shock does not rely on **basic insulation** only but which includes an additional safety precaution such as exposed conductive parts connected to the protective earthing conductor in the fixed wiring of the installation in such a way that exposed conductive parts cannot become live in the event of a failure of the **basic insulation**

NOTE This provision includes a protective conductor in the supply cable.

3.36**additive insulation protected device**

device in which protection against electric shock does not rely on **basic insulation** only, but in which additional safety precautions such as **double insulation** or **reinforced insulation** are provided, there being no provision for protective earthing or reliance upon installation conditions

3.37

installation protected device

device in which the protection against electric shock does not rely on **basic insulation** only, but in which additional safety precautions are provided during the installation according to the installation rules

NOTE This definition is in accordance with 7.2.3 of IEC 61140.

3.38

rated operating time

time during which the device is operating

3.39

temperature-limiting device

device which during abnormal operation limits the temperature of the controlled part by automatically opening the circuit or by reducing the current and which is constructed so that its setting cannot be altered by the user

3.40

type X rewirable attachment

method of attachment of the supply flexible cable such that it can easily be rewired

NOTE 1 The supply flexible cable may be specially prepared and only available from the manufacturer or its service agents.

NOTE 2 A specially prepared flexible cable may also include a part of the device.

3.41

type Z non-rewirable attachment

method of attachment of the supply flexible cable such that it cannot be replaced without breaking or destroying a part of the device

4 General requirements

Devices and **enclosures** shall be so designed and constructed that, in **normal use**, they are reliable and operate without danger to the user or the surroundings.

Compliance is checked by fulfilling all the requirements and tests specified.

5 General notes on tests

5.1 The tests according to this standard are type tests.

5.2 Unless otherwise specified, the tests shall be carried out on a single specimen as delivered under normal conditions of use, which shall satisfy all the tests applicable to the device.

If the device is intended for several supply voltages, for both a.c. and d.c., more than one specimen may be required.

NOTE If it is necessary to dismantle a device for certain tests, an additional specimen is necessary.

The test on constituent parts may require the provision of additional specimens of these parts. If it is necessary to submit such specimens, they shall be presented at the same time as the device.

5.3 Unless otherwise specified, the tests shall be carried out in the order of the clauses. Before starting the tests, the device shall be supplied at **rated voltage** to verify that it is in operating condition.