

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Low-voltage switchgear and controlgear enclosed equipment –
Part 1: Enclosed switch-disconnectors outside the scope of IEC 60947-3 to
provide isolation during repair and maintenance work**

**Appareillage à basse tension sous enveloppe –
Partie 1: Interrupteur-sectionneur en coffret, en dehors du domaine d'application
de la norme CEI 60947-3, destiné à garantir l'isolation pendant
les phases de maintenance**



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INTERNATIONAL STANDARD

NORME INTERNATIONALE

iTeh STANDARD PREVIEW

**Low-voltage switchgear and controlgear enclosed equipment –
Part 1: Enclosed switch-disconnectors outside the scope of IEC 60947-3 to
provide isolation during repair and maintenance work**

<https://standards.iteh.ai/catalog/standards/sist/48c26152-f1ed-4685-be97-785581676106/iec-62626-1-2014>

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**LOW-VOLTAGE SWITCHGEAR AND
CONTROLGEAR ENCLOSED EQUIPMENT –**

**Part 1: Enclosed switch-disconnectors outside the scope of IEC 60947-3
to provide isolation during repair and maintenance work**

FOREWORD

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International Standard IEC 62626-1 has been prepared by subcommittee SC17B: Low-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

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

| FDIS | Report on voting |
|----------------|------------------|
| 17B/1839A/FDIS | 121A/3/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 in the IEC 62626 series, published under the general title *Low-voltage switchgear and controlgear enclosed equipment*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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- withdrawn,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.

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INTRODUCTION

Enclosed switch-disconnectors covered by this part of IEC 62626 are intended for use in various applications, to provide isolation of electrical equipment, especially motor circuits, during repair, cleaning and maintenance works.

Such enclosed switch-disconnectors are sometimes known as “maintenance switches”, or “safety switches”. The name “safety switch” is also used for safety related position switches, inspection switches and switches for other applications, which are not covered by this standard.

This part of IEC 62626 specifies additional requirements for enclosed switch-disconnectors according to IEC 60947-3 to provide isolation of electrical equipment during repair and maintenance work.

Enclosed switch-disconnectors according to this standard are mounted close to the equipment which has to be isolated and are usually operated by instructed persons.

NOTE 1 The term “safety switch” is not recognized in some countries as the same meaning given in this standard.

NOTE 2 Switch-disconnectors do not necessarily meet the requirements for prevention of unexpected start, especially if there are energy sources other than electrical.

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ENCLOSED EQUIPMENT –

Part 1: Enclosed switch-disconnectors outside the scope of IEC 60947-3 to provide isolation during repair and maintenance work

1 Scope

This part of IEC 62626 applies to enclosed switches-disconnectors with rated voltages up to 1 000 V a.c. for repair and maintenance work or cleaning work in load circuits. Devices within the scope of this standard are derived from switch-disconnectors according to IEC 60947-3. Enclosed switch-disconnectors in this standard are suitable for isolation according to IEC 60947 series and are not supposed to be equipped with means for remote control or automatic switching to avoid unexpected or accidental start. These devices are not intended to be used for operational switching, quick start and stop or jogging.

NOTE 1 However, these kind of devices can provide the possibility to switch off electrical equipment (even in a critical situation or not).

Devices within the scope of this standard provide isolation of electrical equipment, especially in motor circuits, during repair and maintenance or cleaning works.

Enclosed switch-disconnectors (for various applications) provide isolation of electrical equipment during repair and maintenance work, named “maintenance switches”, are designated hereafter as devices with:

- [IEC 62626-1:2014](https://standards.iteh.ai/catalog/standards/sist/48c26152-f1ed-4685-be97-e7db659c1fa3/iec-62626-1-2014)
- different classes;
 - characteristics of each class;
 - minimum test requirements;
 - information to be marked on the equipment or made available by the manufacturer, for example in the catalogue.

NOTE 2 This standard does not specify additional requirements that are necessary for the application of these switches, for example, in explosive atmospheres (e.g. ATEX in Europe).

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.

IEC 60050 (all parts), *International electrotechnical vocabulary*. Available from: <http://www.electropedia.org/>

IEC 60947-1:2007, *Low-voltage switchgear and controlgear – Part 1: General rules*
Amendment 1:2010

IEC 60947-3:2008, *Low-voltage switchgear and controlgear – Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units*
Amendment 1:2012

IEC 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-441, IEC 60947-1, IEC 60947-3, as well as the following apply.

3.1

(mechanical) switch

mechanical switching device capable of making, carrying and breaking currents under normal circuit conditions which may include specified operating overload conditions and also carrying for a specified time currents under specified abnormal circuit conditions such as those of short-circuit

Note 1 to entry: A switch may be capable of making, but not breaking, short-circuit currents.

[SOURCE: IEC 60050-441:1984, 441-14-10]

3.2

disconnector

mechanical switching device which, in the open position, complies with the requirements specified for the isolating function

Note 1 to entry: A disconnector is capable of opening and closing a circuit when either a negligible current is broken or made, or when no significant change in the voltage across the terminals of each of the poles of the disconnector occurs. It is also capable of carrying currents under normal circuit conditions and carrying for a specified time currents under abnormal conditions such as those of short circuit.

[SOURCE: IEC 60050-441:1984, 441-14-05, modified — Reference has been made to the isolating function instead of the isolating distance.]

3.3

switch-disconnector

switch which, in the open position, satisfies the isolating requirements specified for a disconnector

[SOURCE: IEC 60050-441:1984, 441-14-12]

3.4

enclosed switch

switch with a dedicated enclosure, providing a specified degree of protection against certain external influences

4 Classification

Devices according to this standard are classified into two classes, class 0 and class 1. Class 0 is the minimum requirement level, as class 1 is this required by harsh and rough/heavy duty conditions, for example for chemical industries.

Both are specified in Table 1.

5 Characteristics

Clause 4 of IEC 60947-3:2008, Amendment 1:2012 applies.

6 Product information

6.1 Nature of information

Subclause 5.1 of IEC 60947-1:2007, Amendment 1:2010 applies with the following additional dashed item under list of “*Characteristics*”:



- corresponding class of this standard.

6.2 Markings

6.2.1 Front-marking

Each device shall be marked in a durable and legible manner with the following data.

The markings for a), b) and c) below shall be on the equipment itself or on a name-plate or name-plates attached to the device, and shall be located at a place such that they are legible from the front after mounting the equipment in accordance with the manufacturer's instructions.

- a) Indication of the open and closed position. The open and closed position shall be respectively indicated by the graphical symbols  (IEC 60417-5008 (2002-10)) and  (IEC 60417-5007 (2002-10)), see 7.1.6.1 of IEC 60947-1:2007.
- b) Symbol for marking according to this standard, see Figure 1.

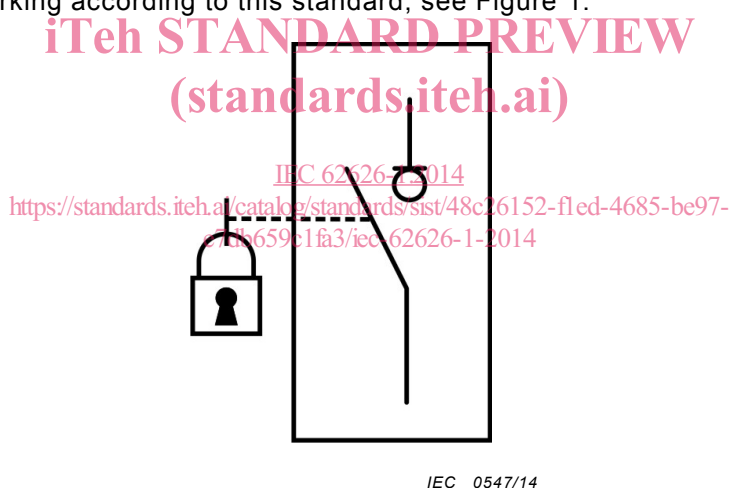


Figure 1 – Symbol for marking according to this standard

- c) A corrosion-resistant label or plate marked with the text “maintenance switch” or translated in national language. The label or plate shall be colored according to national practice.

The height of the text shall be at least 5 mm. The text “maintenance switch” shall be marked in a durable and legible manner and the color of the text shall be different from the color of the label or plate.

NOTE The translations of the terms “maintenance switch” on the label into different languages can be for example “interrupteur de maintenance”, “Sicherheitschalter”, or equivalent translations in other languages.

6.2.2 Additional marking

The following information shall be marked on the equipment, but does not need to be visible from the front when the device is mounted:

- a) manufacturer's name or trade mark;
- b) type designation or serial number;

- c) rated operational current (or rated power) at the rated operational voltage;
- d) value (or range) of the rated frequency;
- e) number of this standard (IEC 62626-1) including class (see Clause 4), if the manufacturer claims compliance with this standard.

7 Normal service, mounting and transport conditions

Clause 6 of IEC 60947-3:2008 applies, as applicable.

8 Constructional and performance requirements

8.1 Constructional requirements

8.1.1 General

To fulfill the safety disconnection requirements, it is necessary to have both a switch for start and stop and a separate maintenance switch. A maintenance switch shall not be equipped with means for remote control or automatic switching.

Subclause 7.1 of IEC 60947-3:2008, Amendment 1:2012 applies, as applicable.

8.1.2 Locking

The locking means shall be designed in such a way that the device can be padlocked in OFF position. The requirements for padlocking and opening of the enclosure are given in Table 1.

8.1.3 Environmental influences

The corrosion resistance of the device shall be tested. Requirements for corrosion resistance are given in Table 1.

8.1.4 Mechanical strength

The mechanical strength of the device shall be tested. Requirements for mechanical strength are given in Table 1.

8.1.5 Degree of protection

The device shall have a minimum degree of protection according to Table 1.

8.1.6 Operation/actuation

Actuators mounted on removable covers or on panel or cabinet doors shall be so designed that, when the covers are replaced or the doors closed, the actuator will engage correctly with the associated mechanism.

8.2 Performance requirements

8.2.1 General

Subclause 7.2 of IEC 60947-3:2008, Amendment 1:2012 applies, as applicable.

8.2.2 Switching capacity

The device shall have a utilization category according to Table 1.

The device shall be designed for uninterrupted duty (see 4.3.4.2 of IEC 60947-1:2007).