IEC 62626-1

Edition 2.0 2023-11
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

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~~
Additional requirements for enclosed switch-disconnectors in accordance with IEC 60947-3 – Isolation of electrical equipment during repair and maintenance work in specific applications

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 62626-1:2014. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 62626-1 has been prepared by subcommittee SC121A: Low-voltage switchgear and controlgear, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage. It is an International Standard.

This second edition cancels and replaces the first edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) update of this document based on IEC 60947-1:2020.

The text of this International Standard is based on the following documents:

Draft	Report on voting
121A/569/FDIS	121A/581/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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 document.

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

Enclosed switch-disconnectors in accordance with this document are mounted close to the equipment ~~which has to be~~ being isolated ~~and are usually operated by instructed persons~~.

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

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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1 Scope

This part of IEC 62626 applies to enclosed switches-disconnectors with rated voltages up to 1 000 V AC for repair and maintenance work or cleaning work in load circuits. Devices within the scope of this document are ~~derived from~~ switch-disconnectors in accordance with IEC 60947-3 with specific additional requirements. Enclosed switch-disconnectors in this document are suitable for isolation in accordance with the 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, for example quick start and stop ~~or~~, jogging.

NOTE 1 However, this 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 document provide isolation of electrical equipment, especially in motor circuits, during repair and maintenance or cleaning works.

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

a) different classes;

b) characteristics of each class;

c) minimum test requirements;

d) information to be marked on the equipment or made available by the manufacturer, for example in the catalogue.

NOTE 2 This document 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 are referred to in the text in such a way that some or all of their content constitutes requirements 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 60050 (all parts), International electrotechnical vocabulary. Available from: <http://www.electropedia.org/>*~~

IEC 60050-441, *International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses* (available at www.electropedia.org)

IEC 60947-1:~~2007~~2020, *Low-voltage switchgear and controlgear – Part 1: General rules* ~~Amendment 1:2010~~

IEC 60947-3:~~2008~~2020, *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)*
IEC 62262:2002/AMD1:2021

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 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

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 in accordance with this document 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.~~ Class 0 is the minimum requirement; class 1 is the class required when specified by the user, for example the chemical industry, for their more demanding environment.

Both are specified in Table 1.

5 Characteristics

IEC 60947-3:~~2008~~2020, Clause 5, applies.

6 Product information

6.1 Nature of information

IEC 60947-1:~~2007~~2020, 6.1, applies with the following additional dashed item under the list of characteristics:

– corresponding class of this document.

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 nameplate or nameplates 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 indicated by the graphical symbols ◯ (IEC 60417-5008:2002-10) and ▮ (IEC 60417-5007:2002-10), respectively, see IEC 60947-1:~~2007~~2020, 8.1.6.1.

b) Symbol for marking in accordance with this document, see Figure 1.

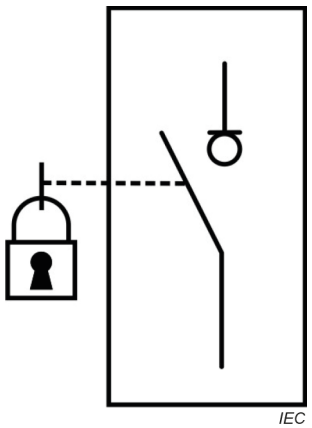

Figure 1 – Symbol for marking in accordance with this document

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.~~

A corrosion-resistant label or plate marked with the text in a minimum of 5 mm high characters, "maintenance switch". National regulations can apply.

6.2.2 Additional marking

The following information shall be marked on the equipment, but it is not necessary that it be visible from the front when the device is mounted:

a) manufacturer's name or trademark;

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 document;

f) class 0 or class 1 as applicable to the device.

7 ~~Normal service, mounting and transport conditions~~

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

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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.

IEC 60947-3:~~2008~~2020, 8.1, applies.

8.1.2 Locking

The locking means shall be designed in such a way that the device can be padlocked in the 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.