IEC 60947-3

Edition 4.0 2020-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Low-voltage switchgear and controlgear –
Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

Appareillage à basse tension –
Partie 3: Interrupteurs, sectionneurs, interrupteurs-sectionneurs et combinés-fusibles

IEC 60947-3:2020-04

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

FOREWORD

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International Standard IEC 60947-3 has been prepared by subcommittee 121A: Low-voltage switchgear and controlgear, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage.

This fourth edition cancels and replaces the third edition published in 2008, Amendment 1:2012 and Amendment 2:2015. This edition constitutes a technical revision.

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

- addition of critical load current tests for DC switches (see 9.3.9);
- addition of requirements for a conditional short-circuit rating for disconnectors, switches, and switch-disconnectors protected by circuit-breakers (see 9.3.7.2);
- addition of new categories for high-efficiency motors switching (see Annex A);

- addition of new Annex E for connection to aluminium conductors;
- addition of new Annex F for power losses measurement.

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

FDIS	Report on voting
121A/340/FDIS	121A/354/RVD

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

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

A list of all parts in the IEC 60947 series, published under the general title *Low voltage switchgear and controlgear*, can be found on the IEC website.

This part is to be used in conjunction with the sixth edition of IEC 60947-1:2020 The numbering of the subclauses is sometimes not continuous because it is based on IEC 60947-1:2020.

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

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- withdrawn,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

INTRODUCTION

The provisions of the general rules dealt with in IEC 60947-1 are applicable to this document, where specifically called for. Clauses and subclauses, tables, figures and annexes of the general rules thus applicable are identified by reference to the sixth edition of IEC 60947-1:2020, for example, 5.3.4.1 of IEC 60947-1:2020, Table 4 of IEC 60947-1:2020, or Annex A of IEC 60947-1:2020.

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

1 Scope

This part of IEC 60947 applies to switches, disconnectors, switch-disconnectors and fuse-combination units and their dedicated accessories to be used in distribution circuits and motor circuits of which the rated voltage does not exceed 1 000 V AC or 1 500 V DC.

NOTE 1 Accessories are interconnecting units, extended terminals, internal coils, auxiliary contacts, motor operator, etc. offered as options with the basic unit.

This document does not apply to equipment coming within the scope of IEC 60947-2, IEC 60947-4-1 and IEC 60947-5-1.

Particular requirements for switches, disconnectors, switch-disconnectors and fuse-combination units for use in photovoltaic (PV) DC applications are given in Annex D.

Specific requirements for LV switchgear intended for the connections of aluminium conductors are given in Annex E.

Guidance on measurement of power loss is provided in Annex F.

This document does not include the additional requirements necessary for electrical apparatus for explosive gas atmospheres.

NOTE 2 Depending on its design, a switch (or disconnector) can be referred to as "a rotary switch (disconnector)", "cam-operated switch (disconnector)", "knife-switch (disconnector)", etc.

NOTE 3 In this document, the word "switch" also applies to the apparatus referred to in French as "commutateurs", intended to modify the connections between several circuits and *inter alia* to substitute a part of a circuit for another.

NOTE 4 In general, throughout this document, switches, disconnectors, switch-disconnectors and fuse-combination units will be referred to as "equipment".

The object of this document is to state:

a) the characteristics of the equipment;
b) the conditions that apply to the equipment with reference to:
    1) operation and behaviour in normal service;
    2) operation and behaviour in case of specified abnormal conditions, e.g. short-circuit;
    3) dielectric properties;
c) the tests for confirming that these conditions have been met and the methods that are adopted for these tests;
d) the information relevant to the marking of the equipment or made available by the manufacturer, e.g. in the catalogue.

Specific items requiring agreement between the user and the manufacturer are identified in Annex B.