

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Low-voltage switchgear and controlgear –  
Part 4-1: Contactors and motor-starters – Electromechanical contactors and  
motor-starters**

**Appareillage à basse tension –  
Partie 4-1: Contacteurs et démarreurs de moteurs – Contacteurs et démarreurs  
électromécaniques**



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**LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –**

**Part 4-1: Contactors and motor-starters –  
Electromechanical contactors and motor-starters**

**INTERPRETATION SHEET 1**

This interpretation sheet 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.

The text of this interpretation sheet is based on the following documents:

DISH	Report on voting
121A/336/DISH	121A/342/RVDISH

<https://standards.iteh.ai/catalog/standards/sis/b44943b9-76a1-41eb-9c33-79ae2889fddc/iec-60947-4-1-2018>

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

**Interpretation of the first paragraph of 6.2**

The reference to 5.2 of IEC 60947-1:2007, IEC 60947-1:2007/AMD1:2010 is intended to cover the whole subclause where its first paragraph can be discarded.

In particular, the third paragraph of this Subclause 5.2 requiring the marking on the equipment of manufacturer's name or trademark and type designation or serial number is covering items a) and b) of 6.1.1 of IEC 60947-4-1:2018.

**Interpretation of footnotes <sup>n</sup> and <sup>o</sup> of Table 7**

The standard making conditions for the utilization category AC-3e are defined by the ratio  $I / I_e$  equal to 12 with the corresponding value of  $\cos \phi$  in footnote <sup>o</sup>.

Footnote <sup>n</sup> provides the possibility to select an alternate value of the ratio  $I / I_e$  between 12 and 13, and gives the corresponding equations to determine the value of  $\cos \phi$ .

**Interpretation of the rated operational current of Table 13 and Table 14**

Tables 13 and 14 are intended to be used for contactors and starters specified for motor loads. If the contactor or starter is specified with more than one motor load utilization category (AC-2, AC-3, AC-3e or AC-4), the rated operational current  $I_e$  corresponding to the utilization category AC-3 is preferred for determining the prospective current “ $r$ ” for the test.

The utilization category AC-3 is considered as the most representative use case and is deemed to cover the other motor utilization categories.

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[IEC 60947-4-1:2018](https://standards.iteh.ai/catalog/standards/sist/b44943b9-76a1-41eb-9c33-79ae2889fdcd/iec-60947-4-1-2018)

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

**Part 4-1: Contactors and motor-starters –  
Electromechanical contactors and motor-starters**

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International Standard IEC 60947-4-1 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 2009 and its Amendment 1:2012. This edition constitutes a technical revision.

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

- Scope structure and exclusions
- Editorial correction of notes and hanging paragraphs
- Reference to IEC 62683-1
- Motor protective switching device (MPSD) with its requirements

- Safety aspects related to:
  - General aspects;
  - Limited energy circuits;
  - Electronic circuits;
  - Assessment procedure for electromechanical overload protection used in safety - applications (new Annex L)
- Introduction of provisions covering the impact of higher locked rotor current to achieve high efficiency class
- Mention of dedicated wiring accessories
- Pickup power measurement
- Alignment to IEC 60947-1:2007, IEC 60947-1:2007/AMD1:2010, and IEC 60947-1:2007/AMD2:2014
- Direct current requirements for covering photovoltaic application (new Annex M)
- Load monitoring indicators (new Annex O)
- Short-circuit breaking tests of MPSD (new Annex P)
- Co-ordination under short-circuit conditions between a MPSD and another short-circuit protective device associated in the same circuit (new Annex Q)

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

FDIS	Report on voting
121A/224/FDIS	121A/233/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 of the IEC 60947 series can be found, under the general title *Low-voltage switchgear and controlgear*, on the IEC website.

This document shall be read in conjunction with IEC 60947-1:2007, IEC 60947-1:2007/AMD1:2010, IEC 60947-1:2007/AMD2:2014, *Low voltage switchgear and controlgear – Part 1: General rules*. The provisions of the general rules are applicable to this document, where specifically called for.

The provisions of the general rules dealt with IEC 60947-1 are applicable to this part of IEC 60947 series where specifically called for. Clauses and subclauses, tables, figures and annexes of the general rules thus applicable are identified by reference to IEC 60947-1:2007, IEC 60947-1:2007/AMD1:2010, and IEC 60947-1:2007/AMD2:2014. For example, 4.3.4.1 of IEC 60947-1:2007, Table 4 of IEC 60947-1:2007, or Annex A of IEC 60947-1:2007.