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- [About this portal](#)
- [Latest updates](#)

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[Resource detail](#)

[Citations](#)

IEC 60947-4-2:2011 Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters

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Abbreviation

IEC 60947-4-2:2011

Valid from

18/05/2011

Information provider

International Electrotechnical Commission

Author

International Electrotechnical Commission

Information type

IEC Standard

Format

PDF

Cited By

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Description

IEC 60947-4-2:2011 applies to a.c. semiconductor motor controllers and starters, which may include a series mechanical switching device, intended to be connected to circuits, the rated voltage of which does not exceed 1 000 V a.c. This standard characterizes a.c. semiconductor motor controllers and starters with and without bypass means. This third edition replaces the second edition published in 1999 and its Amendments 1 (2001) and 2 (2006). It is a technical revision. This edition includes the following significant technical changes with respect to the previous edition and its amendments:

- updated EMC normative references and associated requirements,
- new references to IEC 60947-1,
- marking of electronic relays without thermal memory,
- marking of tripping time at 0 °C ambient or below,
- new test requirements for limits of operation of time-delay overload relays,
- new classes of overload current withstand time,
- damp heat, salt mist, vibration and shock tests,
- short-circuit test in the smallest enclosure,
- update of the routine and sampling tests.

The contents of the corrigendum of July 2012 have been included in this copy.

Scope

This standard applies to a.c. semiconductor motor controllers and starters, which may include a series mechanical switching device, intended to be connected to circuits, the rated voltage of which does not exceed 1 000 V a.c.

This standard characterizes a.c. semiconductor motor controllers and starters with and without bypass means.

AC semiconductor motor controllers and starters dealt with in this standard are not normally designed to interrupt short-circuit currents. Therefore, suitable short-circuit protection (see 8.2.5) should form part of the installation, but not necessarily of the a.c. semiconductor motor controller or starter.

In this context, this standard gives requirements for a.c. semiconductor motor controllers and starters associated with separate short-circuit protective devices.

This standard does not apply to:

- continuous operation of a.c. motors at motor speeds other than the normal speed;
- semiconductor equipment, including semiconductor contactors (see 2.2.13 of IEC 60947-1:2007) controlling non-motor loads;
- electronic a.c. power controllers covered by IEC 60146 series.

Contactors, overload relays and control circuit devices used in a.c. semiconductor motor controllers and starters should comply with the requirements of their relevant product standard. Where mechanical switching devices are used, they should meet the requirements of their own IEC product standard, and the additional requirements of this standard.

The object of this standard is to state as follows:

- the characteristics of a.c. semiconductor motor controllers and starters and associated equipment;
- the conditions with which a.c. semiconductor motor controllers and starters comply with reference to

- a) their operation and behaviour;
- b) their dielectric properties;
- c) the degrees of protection provided by their enclosures where applicable;
- d) their construction; – the tests intended for confirming that these conditions have been met, and the methods to be adopted for these tests;

- the information to be given with the equipment, or in the manufacturer's literature.

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Back

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Table of Contents

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| | | |
|--|--|--|
| | | |
| | | |
| | | |

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