

INTERNATIONAL STANDARD

**Automatic electrical controls -
Part 2-10: Particular requirements for motor-starting relays**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Automatic electrical controls -
Part 2-10 Particular requirements for motor-starting relays**

FOREWORD

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IEC 60730-2-10 has been prepared by IEC technical committee 72: Automatic electrical controls. It is an International Standard.

This third edition cancels and replaces the second edition published in 2006. This edition constitutes a technical revision.

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

- a) adoption of IEC 60730-1:2022 with all of its significant changes.

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

Draft	Report on voting
72/1522/CDV	72/1543/RVC

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.

This part 2-10 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the sixth edition of that standard (2022). Consideration may be given to future editions of, or amendments to, IEC 60730-1.

This part 2-10 supplements or modifies the corresponding clauses in IEC 60730-1, so as to convert that publication into the IEC standard: Particular requirements for motor-starting relays.

Where this part 2-10 states "addition", "modification" or "replacement", the relevant requirement, test specification or explanatory matter in Part 1 should be adapted accordingly.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies.

In the development of a fully international standard it has been necessary to take into consideration the differing requirements resulting from practical experience in various parts of the world and to recognize the variation in national electrical systems and wiring rules.

In this publication:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.
- defined terms: **bold type**.

Subclauses, notes or items which are additional to those in Part 1 are numbered starting from 101, additional annexes are lettered AA, BB, etc.

The reader's attention is drawn to the fact that Annex Q, Annex R, Annex S, and Annex T list all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

A list of all parts of the IEC 60730 series, under the general title: *Automatic electrical controls*, 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.

1 Scope

Replacement:

This part of IEC 60730 applies to automatic electrical **motor-starting relays**

- intended to control the start windings of single phase motors;
- for use in, on, or in association with equipment for household appliance and similar use;

NOTE 1 Throughout this document, the word "equipment" means "appliance and equipment" and "control" means "**motor-starting relays**".

- intended for appliances within the scope of IEC 60335;
- for equipment that is used in building automation within the scope of ISO 16484 series and IEC 63044 series (HBES/BACS);
- for equipment that is used by the public, such as equipment intended to be used in shops, offices, hospitals, farms and commercial and industrial applications;

EXAMPLE 1 Controls for commercial catering, heating and air-conditioning equipment.

- used in, on, or in association with equipment that are smart enabled;

EXAMPLE 2 Smart grid control, remote interfaces/control of energy-consuming equipment.

- that are AC or DC powered with a rated voltage not exceeding 690 V AC or 600 V DC;
- used in, on, or in association with equipment that use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof;
- utilized as part of a control system or controls which are mechanically integral with multifunctional controls having non-electrical outputs;
- using NTC or **PTC thermistors**, requirements for which are contained in Annex J;
- that are mechanically or electrically operated, responsive to or controlling such characteristics as current and voltage, or combinations thereof;

EXAMPLE 3 Centrifugal motor-starting devices.

- as well as manual controls when such are electrically and/or mechanically integral with automatic controls.

NOTE 2 Requirements for manually actuated mechanical switches not forming part of an automatic control are contained in IEC 61058-1-1.

This document applies to

- the inherent safety of motor-starting control, and
- functional safety of motor-starting control and safety related systems (when required),
- controls where the performance (for example the effect of EMC phenomena) of the product can impair the overall safety and performance of the controlled system,
- the operating values, operating times, and operating sequences where such are associated with equipment safety,
- motor-starting controls incorporating electronic devices, thermistor elements, thermal elements or magnetic elements.

This document specifies the requirements for construction, operation and testing of automatic electrical **motor-starting relays** used in, on, or in association with an equipment.

This document does not

- apply to **motor-starting relays** designed exclusively for industrial process applications unless explicitly mentioned in the relevant equipment standard. However, this document can be applied to motor-start relays for equipment intended specifically for industrial applications in cases where no relevant safety standard exists;
- take into account the response value of an automatic action of a control, if such a response value is dependent upon the method of mounting the control in the equipment. Where a response value is of significant purpose for the protection of the user, or surroundings, the value defined in the appropriate equipment standard or as determined by the manufacturer will apply;
- apply to general purpose relays or to contactors and motor starters of the type covered by IEC 60947 series;
- apply to mechanically operated motor-starting devices.

2 Normative references

This clause of Part 1 is applicable except as follows:

Addition:

IEC 60947 (all parts), *Low-voltage switchgear and controlgear*

3 Terms and definitions

This clause of Part 1 is applicable except as follows:

3.2 Definitions of types of control according to purpose

Additional definitions:

3.2.101

motor-starting relay

electrically operated control intended for integration or incorporation in an appliance and used within a motor circuit to control the connection between the main winding and the auxiliary starting winding for the purpose of starting single-phase motors in household appliances and similar applications

Note 1 to entry: Normally, an electro-mechanical **motor-starting relay** will provide a type 1 action or, if electronic, a class A control function.

4 General

This clause of Part 1 is applicable.