IEC 60730-1

Edition 4.0 2010-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Automatic electrical controls for household and similar use – Part 1: General requirements

Dispositifs de commande électrique automatiques à usage domestique et analogue – Partie 1: Exigences générales

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUTOMATIC ELECTRICAL CONTROLS FOR HOUSEHOLD AND SIMILAR USE –

Part 1: General requirements

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60730-1 has been prepared by IEC technical committee 72: Automatic controls for household use.

This fourth edition cancels and replaces the third edition published in 1999, Amendment 1 (2003), and Amendment 2 (2007).

The main technical modifications of this standard since this previous publication are listed below:

– changes to the low temperature test requirements for in-line cords;
– revision to the pollution degree for the environment surrounding contacts;
– addition of the use of screwless terminals on printed circuit boards and revisions to creepage distances;
– additions of CISPR 11 EMC requirements;

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- incorporation of EMC test levels from IEC 60335 series;
- additional testing for flexible cords;
- revisions to the requirements for resistance to heat, fire and tracking including replacement of Clause 21 and Annexes F and G;
- new Annex T for additional requirements for non-SELV supplied sensor cable or cord;
- new requirements in H.27.1 for first and second fault approach to ensure functional safety;
- incorporation of software techniques from IEC 61508-3 in H.11.12;
- replacement of Annex D (Canada and USA) with a reference to UL 746C;
- updates to the references and bibliography;
- the keyword index was deleted as unnecessary due to the availability of search functions for electronic editions of the standard.

The text of this standard is based on the following documents:

FDIS	Report on voting
72/789/FDIS	72/790/RVD

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

A list of all parts of the IEC 60730 series, under the general title: *Automatic controls for household and similar use*, can be found on the IEC website.

In the development of a fully international standard to cover automatic controls for household and similar use, 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.

The “in some countries” notes regarding differing national practices are contained in the following subclauses:

2.1.5	12.1.6	18.1.6.2
2.7.2	12.3	18.1.6.3
2.7.3	Table 12 (13.2.1), Note 14	18.4
2.14.2	13.3.4	19.2.4.1
4.2.1	14.1.1	19.2.5.1
6.6.1	Table 13 (14.7.4), Notes 1, 7	20
Table 1 (7.2), Note 9	14.4	21.1
7.4.3	15.1	21.4
7.4.4.2	16.2.1	27.2.3.1
8.1.1	17.1.3.1	Annex C
9.1	Table 14 (17.2.5)	Annex D
9.3.2	17.2.2	
9.3.4	Table 15 (17.2.5)	H.26.10
9.5.2	17.2.3	Table H.16 (H.26.10.4)
Table 3 (10.1.4), Note 1	17.2.3.1	
10.1.4.2	Table 16 (17.2.5)	
10.1.4.3	17.5.1	Table H.21 (H.27.1), Note 7
10.1.14	17.6.2	Table K.1
10.1.16	17.7.7	Table K.2

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10.1.16.1	17.8.4.1	R.1
Table 6 (10.2.1), Note 1	17.10	T.3.2
11.5	17.10.4	
Table 10 (11.8.2), Note 1	17.12.5	
11.11.1.2	17.14	
11.11.1.3	18.1.6	
11.11.1.4	18.1.6.1	

It is envisaged that in the next edition of this standard it will be found possible to remove those differences that are covered by new IEC standards now being prepared by other technical committees.

This part 1 is to be used in conjunction with the appropriate part 2 for a particular type of control, or for controls for particular applications. This part 1 may also be applied, so far as reasonable, to controls not mentioned in a part 2, and to controls designed on new principles, in which cases additional requirements may be considered to be necessary.

See also 4.3.5.2 and 4.3.5.3.

Where, for a particular clause or subclause, the text of part 2 indicates:

Addition: the part 1 text applies with the additional requirement indicated in a part 2;

Modification: the part 1 text applies with a minor change as indicated in a part 2;

Replacement: the part 2 text contains a change which replaces the part 1 text in its entirety.

Where no change is necessary, the part 2 indicates that the relevant clause or subclause applies.

NOTE In this standard the following print types are used:

– Requirements proper: in roman type.

– *Test specifications: in italic type.*

– Explanatory matter: in smaller roman type.

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

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

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AUTOMATIC ELECTRICAL CONTROLS FOR HOUSEHOLD AND SIMILAR USE –

Part 1: General requirements

1 Scope and normative references

1.1 In general, this International Standard applies to automatic electrical controls for use in, on, or in association with equipment for household and similar use, including controls for heating, air-conditioning and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof.

1.1.1 This International Standard applies to the inherent safety; to the operating values, operating times, and operating sequences where such are associated with equipment safety, and to the testing of automatic electrical control devices used in, or in association with, household or similar equipment.

This standard is also applicable to controls for appliances within the scope of IEC 60335-1.

This standard is also applicable to controls for building automation systems within the scope of ISO 16484-2

Throughout this standard the word "equipment" means "appliance and equipment."

This standard does not apply to automatic electrical controls intended exclusively for industrial applications unless explicitly mentioned in the relevant part 2.

This standard is also applicable to individual controls utilized as part of a control system or controls which are mechanically integral with multifunctional controls having non-electrical outputs.

Automatic electrical controls for equipment not intended for normal household use, but which nevertheless may be used by the public, such as equipment intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard.

See also Annex J.

This standard is also applicable to relays when used as controls for IEC 60335 appliances. Additional requirements for the safety and operating values of relays when used as controls for IEC 60335 appliances are contained in Annex U.

NOTE 1 These requirements are referred to by IEC 61810-1, Scope.

NOTE 2 This standard is intended to be used for the testing of any stand-alone relay which is intended to be used as a control of an appliance according to IEC 60335-1. It is not intended to be used for any other stand-alone relay, or to replace the IEC 61810 series of standards.

1.1.2 This standard applies to automatic electrical controls, mechanically or electrically operated, responsive to or controlling such characteristics as temperature, pressure, passage of time, humidity, light, electrostatic effects, flow, or liquid level, current, voltage, acceleration, or combinations thereof.

1.1.3 This standard applies to starting relays, which are a specific type of automatic electrical control, intended to switch the starting winding of a motor. Such controls may be built into, or be separate from, the motor.