SLOVENSKI STANDARD
SIST EN 60730-2-1:1997

01-avgust-1997

Nadomešča:
SIST EN 60730-2-1:1996

Automatic electrical controls for household and similar use - Part 2: Particular requirements for electrical controls for electrical household appliances (IEC 730-2-1:1989, modified)

Automatic electrical controls for household and similar use -- Part 2-1: Particular requirements for electrical controls for electrical household appliances

Automatische elektrische Regel- und Steuergeräte für den Hausgebrauch und ähnliche Anwendungen -- Teil 2-1: Besondere Anforderungen an Regel- und Steuergeräte für elektrische Haushaltsgeräte

Dispositifs de commande électrique automatiques à usage domestique et analogue -- Partie 2-1: Règles particulières pour dispositifs de commande électrique pour appareils électrodomestiques

Ta slovenski standard je istoveten z: **EN 60730-2-1:1997**

ICS:

97.120	Avtomatske krmilne naprave za dom	Automatic controls for household use

SIST EN 60730-2-1:1997 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60730-2-1

January 1997

ICS 97.120

Supersedes EN 60730-2-1:1991 and its amendments

Descriptors: Electrical household appliance, control, automatic control, thermal cut-out, definition, requirement, test

English version

Automatic electrical controls for household and similar use Part 2: Particular requirements for electrical controls for electrical household appliances (IEC 730-2-1:1989, modified)

Dispositifs de commande électrique automatiques à usage domestique et analogue
Partie 2: Règles particulières pour dispositifs de commande électrique pour appareils électrodomestiques
(CEI 730-2-1:1989, modifiée)

Automatische elektrische Regel- und Steuergeräte für den Hausgebrauch und ähnliche Anwendungen
Teil 2: Besondere Anforderungen an Regel- und Steuergeräte für elektrische Haushaltsgeräte
(IEC 730-2-1:1989, modifiziert)

This European Standard was approved by CENELEC on 1996-12-09. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the International Standard IEC 730-2-1:1989, prepared by IEC TC 72, Automatic controls for household use, together with common modifications prepared by the Technical Committee CENELEC TC 72, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60730-2-1 on 1996-12-09.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by publication (dop) 1997-10-01

- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1999-04-01

For products which have complied with EN 60730-2-1:1991 and its amendments A11:1992, A12:1993 and A13:1995 before 1999-04-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2004-04-01.

This Part 2 is to be used in conjunction with EN 60730-1:1995, Automatic electrical controls for household and similar use - Part 1: General requirements. Consideration may be given to future editions of, or amendments to, EN 60730-1.

This Part 2 supplements or modifies the corresponding clauses of EN 60730-1:1995, so as to convert it into the European Standard: Safety requirements for electrical controls for electrical household appliances.

Where a particular clause or subclause of Part 1 is not mentioned in this Part 2, that clause or subclause applies as far as is reasonable. Where this Part 2 states `addition', `modification' or `replacement', the relevant text of Part 1 is to be adapted accordingly.

Subclauses and figures which are in addition to those in Part 1 are numbered 101, 102 etc.
The reference of subclauses and annexes which are in addition to those in IEC 730-2-1 is prefixed with the letter Z.

There are no special national conditions (snc) causing a deviation from this European Standard other than those listed in annex ZB of EN 60730-1.

There are no national deviations from this European Standard other than those listed in annex ZC of EN 60730-1.

NOTE In this document, the following print types are used:
- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type;
- **instructions for modification of the reference: in bold type.**

Endorsement notice

The text of the International Standard IEC 730-2-1:1989 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

Foreword **Delete**

Preface **Delete**

1 Scope

1.1 **Replace** the text of this subclause by:

This standard is applicable to automatic electrical controls to be incorporated in or associated with electrical appliances within the scope of EN 60335-1 and Parts 2 of EN 60335, unless otherwise specified in a particular Part 2 of EN 60730.

1.1.3 **Add:**

Starting relays are tested as voltage sensing or current sensing controls.

1.5 **Delete**

4 General notes on tests

Replace the text by:

This clause of Part 1 is applicable except as follows:

4.1 *Addition*:

The numbers of cycles and the values for *y* are given in annex ZD.

Addition:

4.2.1 If the tests of subclause 14.Z101 have to be performed, six additional samples are required.

6 Classification

Replace the text by:

This clause of Part 1 is applicable except as follows:

6.4.2 *Addition*:

Thermal cut-outs shall be of Type 2 action.

6.5.3 **Delete** the third dashed paragraph.

7 Information

Replace the text by:

This clause of Part 1 is applicable except as follows:

7.2 *Addition*:

For incorporated controls limited marking only is required - see subclause 7.2.6.

Add to note 3 of table 7.2:

A manual reset thermal cut-out shall not reset automatically at a higher temperature than -20 °C, or at a lower temperature if this has been declared.

8 Protection against electric shock

8.1.5 **Delete** the addition.

8.1.9.5 **Replace** by:

If the manufacturer instructs the user to remove a part, that part is regarded as a detachable part even if a tool has to be used for its removal.

13 Electric strength and insulation resistance

Replace by:

This clause of Part 1 is applicable.

14 Heating

Replace by:

This clause of Part 1 is applicable except as follows:

Additional subclause:

14.Z101 If the maximum permitted temperature of a winding or core lamination exceeds the value specified for the text described in 14.1 six additional samples shall be subjected to the following tests:

Moving parts, if any, are locked and a current is passed individually through each winding, this current being such that the temperature of the relevant winding is equal to the maximum temperature measured under the conditions specified in 14.1. This temperature is increased by whichever value is chosen from the following table. The total time during which the current is passed is as indicated in the table for the temperature increase chosen.

Temperature increase °C (K)	Total time h
0 ± 3	p [1]
10 ± 3	0,5 p
20 ± 3	0,25 p
30 ± 3	0,125 p
1) In general, p equals 8000 for controls for EN 60335-1 applications.	

The total time is divided into four equal periods, each of them being followed by a period of 48 h during which the control is subjected to a humidity treatment as specified in 12.2. After the final humidity treatment, the insulation shall withstand an electric strength test and insulation resistance test as specified in clause 13, the test voltage for the electric strength being, however, reduced to 50% of the values specified in the table of that clause.

Failure of only one of the six samples during the first of the four periods of the test is ignored.

If one of the six samples fails during the second, third or fourth period of the test, the remaining five samples are subjected to an additional fifth period of passing current and humidity treatment, followed by an electric strength and insulation resistance test as specified before.

Failure of any of the remaining five controls will entail a rejection.

The controls are then subjected to the test of 17.8, but only for half the number of cycles specified in that subclause. All controls shall then withstand an electric strength test as specified before.

Examples of cases where there may be doubt with regard to the classification of the insulating system of a winding are those two cases where well-known insulating materials are used in an unconventional way, where combinations of materials of different temperature classes are used at a temperature higher than that allowed for the lowest class used or where materials are used for which no sufficient experience is available, as may be the case for integral core insulation.

If it is desired to establish that the insulation system falls within the temperature class claimed by the manufacturer, the winding temperature must be equal to the temperature limit for the class of insulation claimed, increased by the temperature increase chosen from the table.

The temperature increase chosen from the table should be agreed with the manufacturer.

15 Manufacturing deviation and drift

Replace by:

This clause of Part 1 is applicable.

17 Endurance

17.16 **Delete** the additional explanation paragraph.

17.16.103 **Delete** the words 'Type 1.M or' in the second paragraph.

17.16.110 **Replace** the text by:

Motor protectors within the scope of EN 60730-2-2 and EN 60730-2-4 are not within the scope of this Part 2.

17.16.111 **Delete**

17.16.112 **Delete**

20 Creepage distances, clearances and distances through insulation

Replace the text by:

This clause of Part 1 is applicable except as follows:

20.1 *Addition*:

The distance classified as 'Normal' in EN 60730-1 is to be regarded as identical to that classified as 'not protected' in EN 60335-1. The distance classified as 'Clean' in EN 60730-1 is to be regarded as identical to that classified as 'protected' in EN 60335-1.

21 Resistance to heat, fire and tracking

Replace the text by

This clause of Part 1 is applicable except as follows:

21.1 *Addition*

The control category A, B, C and D is chosen to cover the required material applications and appliance applications as specified in EN 60335-1, clause 30 (Annex H).

25 Normal operation

Replace by:

This clause of Part 1 is applicable.

26 Operation with mains-borne perturbations

Replace by:

This clause of Part 1 is applicable.

27 Abnormal operation

Replace by:

This clause of Part 1 is applicable.

Appendices

Replace the title by `**Annexes**'

Replace the text by:

The annexes of Part 1 are applicable except as follows:

Annex H

H26.2 **Add** the following additional explanatory paragraph:

Free standing and independently mounted controls submitted and declared for use with a particular appliance are tested in accordance with H26.2 or H26.2.1.

H26.9 **Delete** the explanatory paragraph

Add the following subclause:

H26.9.Z101 *Test procedure*

The control is subjected to five tests. The tests are performed with the maximum number of outputs connected as permitted by the operating sequence. Three tests are performed with power delivered to the load(s) and two tests are performed without power delivery to the load(s).

Additional annex:

Annex ZD (informative)

Number of cycles and values for *y* for appliance controls

Control	Parameter	Low	Normal	High	Very high
Thermostat	M	300	3 000	10 000	
	A		10 000	30 000	100 000
Temperature limiter	M		1 000	3 000	10 000
	A		1 000	3 000	10 000
Self-resetting thermal cut-out	A		300	3 000	30 000
	y	300h	3 000h	10 000h	
Non self-resetting thermal cut-out	A/M		30	300	1 000
	y	300h	3 000h	10 000h	
Non resettable thermal cut-out	y	300h	3 000h	10 000h	
Energy regulator	M	1 000	3 000	10 000	
	A		10 000	30 000	100 000
Timers	M	3 000	10 000	30 000	
	A	3 000	10 000	30 000	

NOTE: The 'Normal' column will apply for all controls used for appliances within the scope of the parts 2 of EN 60335, unless otherwise specified in a particular Part 2.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
730-2-1

Première édition
First edition
1989-09

Dispositifs de commande électrique automatiques à usage domestique et analogue

Deuxième partie:
Règles particulières pour dispositifs de commande électrique pour appareils électrodomestiques

Automatic electrical controls for household and similar use

Part 2:
Particular requirements for electrical controls for electrical household appliances

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembé Genève, Suisse

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE 15

Pour prix, voir catalogue en vigueur
For price, see current catalogue