



# SLOVENSKI STANDARD

## SIST EN 60730-2-1:1996

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

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

Automatische elektrische Regel- und Steuergeräte für den Hausgebrauch und ähnliche Anwendungen -- Teil 2: Besondere Anforderungen an Regel- und Steuergeräte für elektrische Haushaltsgeräte (standards.iteh.ai)

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

**Ta slovenski standard je istoveten z: EN 60730-2-1:1991/A13:1995**

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#### **ICS:**

97.120	Avtomatske krmilne naprave za dom	Automatic controls for household use
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**SIST EN 60730-2-1:1996**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60730-2-1**

July 1991

UDC 681.521.7:64.06-83:620.1

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

Deuxième partie:

Règles particulières pour dispositifs de  
commande électrique pour appareils  
électrodomestiques  
(CEI 730-2-1:1989, modifiée)

Automatische elektrische Regel- und  
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Teil 2:

Besondere Anforderungen an  
Regel- und Steuergeräte für  
elektrische Haushaltsgeräte  
(IEC 730-2-1:1989, modifiziert)

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[f4b36defc/sist-en-60730-2-1-1996](https://standards.iteh.ai/catalog/standards/sist/178896a4-cb39-4708-9e77-f4b36defc/sist-en-60730-2-1-1996)

This European Standard was approved by CENELEC on 11 September 1990. 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 CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 730-2-1:1989 could be accepted without textual changes, has shown that some common modifications were necessary for the acceptance as European Standard.

The reference document, together with the common modifications prepared by the CENELEC Technical Committee TC 72: Automatic controls for household use, was submitted to the CENELEC members for formal vote.

The text of the draft was approved by CENELEC on 11 September 1990.

The following dates were fixed:

- latest date of publication of  
an identical national standard (dop) 1992-07-01
- latest date of withdrawal of  
conflicting standards (dow) 1995-07-01

For products which have complied with the relevant national standard before 1995-07-01 as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-07-01.

This document supplements or modifies the corresponding clauses of IEC 730-2-1:1989, so as to convert it into the European Standard EN 60730-2-1.

This Part 2 has to be used in conjunction with EN 60730-1:1991, Automatic electrical controls for household and similar use - Part 1: General requirements, and its amendments A1:1991 and A11:1991.

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

Subclauses which are in addition to those in IEC 730-1 are numbered 101, 102, etc. Subclauses which are in addition to those in IEC 730-2-1 are numbered 501, 502 etc. New annexes are numbered ZA, ZB etc.

There are no special national conditions (snc) causing a deviation from this European Standard others than those listed in annex ZA 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 document: 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 its Parts 2.

1.1.3 **Add:**

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

**4 General notes on tests**

**Replace** the text by:

This clause of Part 1 is applicable except as follows:

4.1

**Addition:** <https://standards.iteh.ai/catalog/standards/sist/178896a4-cb39-4708-9e77-f4b36defc1f/sist-en-60730-2-1-1996>

The numbers of cycles and the values for  $y$  are given in Annex ZB.

4.2.1

**Addition:**

If the tests of subclause 14.501 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.

## COMMON MODIFICATIONS

**8 Protection against electric shock**8.1.5 **Delete** the addition.8.1.5.6 **Replace by:**

*If there is an instruction to remove a part during normal use or user maintenance, that part is regarded as a detachable part even if a tool has to be used for its removal.*

8.2.3 **Delete** the second requirement paragraph (added in EN 60730-1).**13 Electric strength and insulation resistance****Replace by:**

This clause of Part 1 is applicable.

**14 Heating****Replace** all text up to 14.4 inclusive by:

This clause of Part 1 is applicable except as follows:

*Additional subclause:* (standards.iteh.ai)

14.501 If the maximum permitted temperature of a winding or core lamination exceeds the value specified for the test described in subclause 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 subclause 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 <sup>1)</sup>
10 ± 3	0,5 p
20 ± 3	0,25 p
30 ± 3	0,125 p
1) In general, p equals 8 000 for controls for EN 60335-1 applications.	

## COMMON MODIFICATIONS

*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 subclause 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 subclause 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 fails 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** all text up to 15.1 inclusive 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.

**20 Creepage distances, clearances and distances through insulation**

**Replace** the text by: .

This clause of Part 1 is applicable except as follows:

## COMMON MODIFICATIONS

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.

### 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.

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**Annex ZA (normative)****Special national conditions (snc)**

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

**Annex ZB (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	100 000
	A		10 000	30 000	
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	100 000
	A		10 000	30 000	
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.

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
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**EN 60730-2-1/A11**

February 1992

UDC 681.521.7:64.06-83:620.1

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

Amendment A11 to the English version of EN 60730-2-1

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SIST EN 60730-2-1:1996

<https://standards.iteh.ai/catalog/standards/sist/178896a4-cb39-4708-9e77->

This amendment A11 modifies the European Standard EN 60730-2-1:1991. It was approved by CENELEC on 10 December 1991. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

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**CENELEC**

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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