

**SLOVENSKI  
STANDARD**

**SIST EN 60730-2-  
9:1997/A2:1998**

prva izdaja  
september 1998

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Automatic electrical controls for household and similar use - Part 2: Particular requirements for temperature sensing controls - Amendment A2 (IEC 60730-2-9:1992/A2:1994, modified)

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ICS 97.120

Referenčna številka  
SIST EN 60730-2-9:1997/A2:1998(en)

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ICS 97.120

Descriptors: Electrical household appliance, control, automatic control, definition, requirement, test, temperature sensing device, thermostat

English version

**Automatic electrical controls for household and similar use**  
**Part 2: Particular requirements for temperature sensing controls**  
(IEC 730-2-9:1992/A2:1994, modified)

Dispositifs de commande électrique  
automatiques à usage domestique  
et analogue  
Partie 2: Règles particulières pour  
les dispositifs de commande  
thermosensibles  
(CEI 730-2-9:1992/A2:1994, modifiée)

Automatische elektrische Regel- und  
Steuergeräte für den Hausgebrauch  
und ähnliche Anwendungen  
Teil 2: Besondere Anforderungen an  
temperaturabhängige Regel- und  
Steuergeräte  
(IEC 730-2-9:1992/A2:1994,  
modifiziert)

This amendment A2 modifies the European Standard EN 60730-2-9:1995; it was approved by CENELEC on 1997-03-11. 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.

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.

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## 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 amendment 2:1994 to the International Standard IEC 730-2-9:1992, prepared by IEC TC 72, Automatic controls for household use, together with the common modifications prepared by the Technical Committee CENELEC TC 72, was submitted to the formal vote and was approved by CENELEC as amendment A2 to EN 60730-2-9:1995 on 1997-03-11.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1997-10-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 1997-10-01

This document supplements or modifies the corresponding clauses of EN 60730-2-9:1995.

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## Endorsement notice

The text of amendment 2:1994 to the International Standard IEC 730-2-9:1992 was approved by CENELEC as an amendment to the European Standard with agreed common modifications as given below.

## COMMON MODIFICATIONS

**Annex J** Delete the replacement.

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NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC  
730-2-9

1992

AMENDEMENT 2  
AMENDMENT 2

1994-11

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Amendement 2

**Dispositifs de commande électrique  
automatiques à usage domestique  
et analogue**

**Partie 2:**

Règles particulières pour les dispositifs  
de commande thermosensibles

Amendment 2

**Automatic electrical controls for  
household and similar use**

**Part 2:**

Particular requirements for temperature  
sensing controls

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Commission Electrotechnique Internationale  
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## FOREWORD

This amendment has been prepared by IEC technical committee 72: Automatic controls for household use.

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

DIS	Report on voting
72(CO)142	72/270/RVD

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

Page 9

## 1 Scope

### 1.1 Add the following:

This standard applies to automatic electrical controls using NTC or PTC thermistors, additional requirements for which are contained in annex J.

#### 1.1.1 Add the following:

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.

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## 6 Classification

### 6.4 According to features of automatic action

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#### Subclause 6.4.3.102

Replace explanatory paragraph by:

In general, thermal cut-outs for specific applications, such as pressurized water-heating systems, may be classified as having Type 2.P action.

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## 17 Endurance

Replace, on page 33, 17.101 to 17.101.3 by the following:

### 17.101 Type 2.P cycling test

Temperature sensing controls of Type 2.P action shall be tested as follows:

17.101.1 *Following the appropriate tests of 17.16 and the evaluation of 17.14, the control is subjected to a thermal cycling test of 50 000 cycles at a temperature maintained between 50 % and 90 % of the switch-off temperature recorded in 17.14. During this test, the switchhead is maintained at  $(20 \pm 5)$  °C.*

*The manufacturer shall declare whether the method of 17.101.2 or 17.101.3 is to be used.*

### 17.101.2 Two-bath method

*The two baths are filled with synthetic oil, water or air (two chambers). The first bath is maintained at a temperature equal to 90 % of the switch-off temperature (°C) recorded in 17.14. The second bath is maintained at a temperature equal to 50 % of the switch-off temperature recorded in 17.14.*

*If a medium different from that used in annex BB is selected for this test, then an appropriate conversion factor must be applied to the time factor indicated in the following paragraph.*

*The temperature sensing element (see 2.8.2 and table 7.2, requirement 47) is immersed in the first bath for a period of time equal to at least five times the time factor. The temperature sensing element is then immersed in the second bath for the same period of time.*

*The transfer between baths is carried out as quickly as possible but care should be taken to avoid mechanical stress to the temperature sensing element.*

### 17.101.3 Temperature change method

*This method is based on a continuously water-cooled oil-filled bath (synthetic oil).*

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*An aluminium cylinder (see figure 17.101.3) is immersed in this bath. The cylinder contains the temperature sensing element under test and a temperature sensing element to control temperature cycling between 50 % and 90 % of the switch-off temperature (°C) recorded in 17.14.* <https://standards.iteh.ai/catalog/standards/sist/e48b6732-9f99-43ac-8cfb-d1298e37fd61/sist-en-60730-2-9-1997-a2-1998>

*The aluminium cylinder is wrapped with a resistance wire to heat the temperature sensing element. To eliminate the difficulties resulting from the difference between the time factor of the temperature sensing element under test and the temperature sensing element which is controlling the test temperature range, the temperature sensing element of a second identical test sample is used.*

The two membrane positions of the second sample, calculated at 50 % and 90 % of the switch-off temperature ( $^{\circ}\text{C}$ ) are measured by a position sensor and used to switch the current through the resistance wire (heat) on and off.

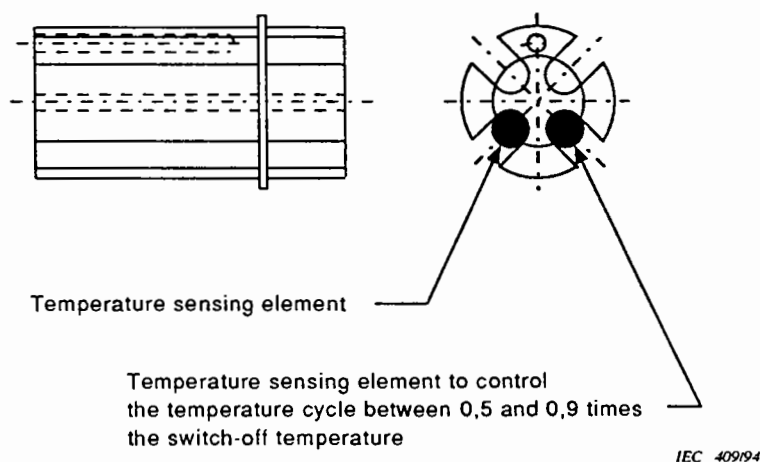
Unless otherwise declared by the manufacturer in table 7.2, requirement 37, the rate of change of temperature rise/fall shall be  $(35 \pm 10)$  K/min.

17.101.4 After this test, for controls other than SOD's, an additional 20 cycles are carried out by increasing the temperature from  $(20 \pm 5)$   $^{\circ}\text{C}$  to 1,1 times the switch-off temperature.

During this test, any manual reset mechanism shall not be reset. The other conditions of 17.101.1 are unchanged.

The purpose of this test is to stress the operating mechanism (e.g., membrane, bellows, etc.).

17.101.5 After thoroughly degreasing the switch head the operating temperature(s) is re-checked under the conditions of clause 15 and the measured value(s) shall still be within the declared limits of deviation and drift.



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Figure 17.101.3 – Aluminium cylinder for temperature change method

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