

**ELEKTRILISED AUTOMAATJUHTIMISSEADMED. OSA 2-9:  
ERINÕUDED TEMPERATUURIANDUR-  
JUHTIMISSEADISTELE**

**Automatic electrical controls - Part 2-9: Particular  
requirements for temperature sensing controls  
(IEC 60730-2-9:2015 + IEC 60730-2-9:2015/A1:2018 +  
IEC 60730-2-9:2015/A2:2020)**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 60730-2-9:2019 +A1+A2:2020 sisaldab Euroopa standardi EN IEC 60730-2-9:2019 ja selle muudatuste A1:2019 ja A2:2020 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 60730-2-9 :2019+A1+A2:2020 consists of the English text of the European standard EN IEC 60730-2-9:2019 and its amendments A1:2019 and A2:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.  Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.02.2019, muudatused A1 22.02.2019 ja A2 29.05.2020.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.  Date of Availability of the European standard is 22.02.2019, for A1 22.02.2019 and A2 29.05.2020.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis ära märgitud märgenditega <b>A1</b> <b>A1</b> .  Muudatusega A2 lisatud või muudetud teksti algus ja lõpp on tekstis ära märgitud märgenditega <b>A2</b> <b>A2</b> .  Selles standardis on rahvusvahelise standardi ühismuudatused tähistatud püstkriipsuga teksti välimisel veerisel.  Standard on kättesaadav Eesti Standardikeskusest.	The start and finish of text introduced or altered by amendment A1 is indicated in the text by symbols <b>A1</b> <b>A1</b> .  The start and finish of text introduced or altered by amendment A2 is indicated in the text by symbols <b>A2</b> <b>A2</b> .  Common modifications have been incorporated into this international standard and changes have been marked by a vertical line on the outer row of the page.  The standard is available from the Estonian Centre for Standardisation.

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**Automatic electrical controls - Part 2-9: Particular requirements  
for temperature sensing controls  
(IEC 60730-2-9:2015 + IEC 60730-2-9:2015/A1:2018 + IEC  
60730-2-9:2015/A2:2020)**

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2-9: Règles particulières pour les dispositifs de commande  
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(IEC 60730-2-9:2015 + IEC 60730-2-9:2015/A1:2018 + IEC  
60730-2-9:2015/A2:2020)

Automatische elektrische Regel- und Steuergeräte - Teil 2-  
9: Besondere Anforderungen an temperaturabhängige  
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## European foreword

The text of document 72/990/FDIS, future edition 4 of IEC 60730-2-9, prepared by IEC/TC 72 "Automatic electrical controls" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60730-2-9:2019.

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The text of document 72/1112/FDIS, future IEC 60730-2-9:2015/A1, prepared by IEC/TC 72 "Automatic electrical controls" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60730-2-9:2019/A1:2019.

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IEC 60730-2-9

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# INTERNATIONAL STANDARD

**Automatic electrical controls –  
Part 2-9: Particular requirements for temperature sensing control**



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IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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# INTERNATIONAL STANDARD

**Automatic electrical controls –  
Part 2-9: Particular requirements for temperature sensing control**

INTERNATIONAL  
ELECTROTECHNICAL  
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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## AUTOMATIC ELECTRICAL CONTROLS –

### Part 2-9: Particular requirements for temperature sensing controls

#### FOREWORD

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International Standard IEC 60730-2-9 has been prepared by technical committee TC 72: Automatic electrical controls.

This bilingual version (2019-09) corresponds to the monolingual English version, published in 2015-05.

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

FDIS	Report on voting
72/990/FDIS	72/998/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.

The French version of this standard has not been voted upon.

This fourth edition cancels and replaces the third edition published in 2008, and its Amendment 1:2011. This edition constitutes a technical revision. This edition includes alignment with the text of 60730-1 fifth edition and the following significant technical changes with respect to the previous edition:

- a) modification of heating-freezing tests in Clause 12;
- b) alignment of the EMC requirements in H.26 to those in other part 2 standards;
- c) addition of requirements in Clause H.27 to cover class B and C control functions of temperature sensing controls;

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-9 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the fifth edition (2013) of that publication. Consideration may be given to future editions of, or amendments to, IEC 60730-1.

This Part 2-9 supplements or modifies the corresponding clauses in IEC 60730-1 so as to convert that publication into the IEC standard: Particular requirements for temperature sensing controls.

Where this Part 2-9 states "addition", "modification", or "replacement", the relevant requirement, test specification or explanatory matter in part 1 should be adapted accordingly.

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

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

4.1.101	17.8.4.101	Annex AA
7.2, Table 1	17.16.101	Clause CC.2
11.4.101	17.16.102	DD.9.2
11.101	17.16.105	EE.3.6
12.101.3	18.102.3	
13.2	23.101	

In this publication:

- 1) The following print types are used:
  - Requirements proper: in roman type;
  - *Test specifications: in italic type;*
  - Notes; in small roman type;
  - Words defined in Clause 2: **bold**.
- 2) Subclauses, notes, tables and figures which are additional to those in part 1 are numbered starting from 101, additional annexes are lettered AA, BB, etc.

A list of all parts of the IEC 60730 series, published under the title *Automatic electrical controls* can be found on the IEC website.

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## AMENDMENT A1 FOREWORD

This amendment has been prepared by subcommittee IEC technical committee 72: Automatic electrical controls.

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72/1112A/FDIS	72/1118/RVD

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## AMENDMENT A2 FOREWORD

This amendment has been prepared by IEC technical committee 72: Automatic electrical controls.

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FDIS	Report on voting
72/1225/FDIS	72/1236/RVD

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## AUTOMATIC ELECTRICAL CONTROLS –

### Part 2-9: Particular requirements for temperature sensing controls

#### 1 Scope and normative references

This clause of Part 1 is applicable except as follows:

##### 1.1 Scope

*Replacement:*

This part of IEC 60730 applies to automatic electrical temperature **sensing controls** for use in, on or in association with equipment, including **electrical 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.

NOTE Throughout this standard, the word "equipment" includes "appliance" and "control system".

This standard is applicable to automatic electrical temperature **sensing controls** forming part of a building automation **control system** within the scope of ISO 16484.

This standard also applies to automatic electrical temperature **sensing controls** for equipment that may be used by the public, such as equipment intended to be used in shops, offices, hospitals, farms and commercial and industrial applications.

This standard does not apply to automatic electrical temperature **sensing controls** intended exclusively for industrial process applications, unless explicitly mentioned in the relevant equipment standard.

##### 1.1.1

*Replacement:*

This 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 temperature **sensing control** devices used in, or in association with, equipment.

NOTE Examples of such **controls** include **boiler thermostats**, **fan controls**, **temperature limiters** and **thermal cut-outs**.

This standard is also applicable to the functional safety of low complexity safety-related temperature **sensing controls** and **systems**.

##### 1.1.2

*Addition:*

This standard also applies to the electrical safety of temperature sensing controls with non-electrical outputs such as refrigerant flow and gas **controls**.



**1.1.3** Not applicable.

**1.1.4**

*Replacement:*

This standard applies to **manual controls** when such are electrically and/or mechanically integral with automatic temperature **sensing controls**.

NOTE Requirements for manual switches not forming part of an **automatic control** are contained in IEC 61058-1.

**1.1.5**

*Replacement:*

This standard applies to a.c. or d.c. powered temperature **sensing controls** with a rated voltage not exceeding 690 V a.c. or 600 V d.c.

**1.1.6**

*Replacement:*

This standard does not take into account the **response value** of an **automatic action** of a temperature **sensing control**, if such a **response value** is dependent upon the method of mounting it 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 shall apply.

**1.1.7**

*Replacement:*

This standard applies also to temperature **sensing controls** incorporating **electronic devices**, requirements for which are contained in Annex H and to temperature **sensing controls** using **NTC thermistors** or **PTC thermistors**, requirements for which are contained in Annex J.

*Additional subclause:*

**1.1.101** This standard applies to **single operation devices** as defined in this standard.

## **1.1 Normative references**

*Addition:*

IEC 60216-1:2013, *Electrical insulating materials – Thermal endurance properties – Part 1: Ageing procedures and evaluation of test results*

IEC 60691, *Thermal links – Requirements and application guide*

IEC 60730-2-4, *Automatic electrical controls for household and similar use – Part 2-4: Particular requirements for thermal motor protectors for motor-compressors of hermetic and semi-hermetic type*

## **2 Terms and definitions**

This clause of Part 1 is applicable except as follows: