Automatic electrical controls –
Part 2-9: Particular requirements for temperature sensing controls
72/990/FDIS

FINAL DRAFT INTERNATIONAL STANDARD
PROJET FINAL DE NORME INTERNATIONALE

Project number  IEC 60730-2-9/Ed4

Numéro de projet  IEC 60730-2-9/Ed4

IEC/TC or SC  CEI/CE ou SC  Secretariat / Secrétariat

TC72  USA

Submitted for parallel voting in CENELEC
Soumis au vote parallèle au CENELEC

Distributed on / Diffusé le
2015-02-13

Voting terminates on / Vote clos le
2015-04-17

Also of interest to the following committees
Intéresse également les comités suivants

Supersedes document
Remplace le document
72/946/CDV and 72/982/RVC

Horizontal standard
Norme horizontale

Other TC/SCs are requested to indicate their interest, if any, in this FDIS to the TC/SC secretary
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Functions concerned
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IEC 60730-2-9/Ed4: Automatic electrical controls - Part 2-9: Particular requirements for temperature sensing controls

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L’attention des Comités nationaux de la IEC, membres du CENELEC, est attiré sur le fait que ce projet finale de Norme internationale est soumis au vote parallèle.
Les membres du CENELEC sont invités à voter via le système de vote en ligne du CENELEC.

ATTENTION IEC – CENELEC PARALLEL VOTING
The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this final draft International Standard (DIS) is submitted for parallel voting.
The CENELEC members are invited to vote through the CENELEC online voting system.

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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.

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

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

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

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

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

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.

A bilingual version of this publication may be issued at a later date.

The National Committees are requested to note that for this publication the stability date is 2017.

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.
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.

1.2 Normative references

Addition:


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