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**Automatic electrical controls –
Part 2-5: Particular requirements for automatic electrical burner control systems**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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REDLINE VERSION



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CONTENTS

FOREWORD	4
1 Scope and normative references	7
2 Terms and definitions	9
3 General requirements	17
4 General notes on tests	17
5 Rating	18
6 Classification	18
7 Information	19
8 Protection against electric shock	23
9 Provision for protective earthing	23
10 Terminals and terminations	23
11 Constructional requirements	24
12 Moisture and dust resistance	31
13 Electric strength and insulation resistance	31
14 Heating	32
15 Manufacturing deviation and drift	33
16 Environmental stress	34
17 Endurance	34
18 Mechanical strength	37
19 Threaded parts and connections	38
20 Creepage distances, clearances and distances through solid insulation	38
21 Resistance to heat, fire and tracking	38
22 Resistance to corrosion	38
23 Electromagnetic compatibility (EMC) requirements – Emission	38
24 Components	38
25 Normal operation	38
26 Electromagnetic compatibility (EMC) requirements – Immunity	38
27 Abnormal operation	38
28 Guidance on the use of electronic disconnection	39
Annex H (normative) Requirements for electronic controls	40
Annex J (normative) Requirements for thermistor elements and controls using thermistors	58
Annex BBAA (informative) Functional characteristics of burner control systems to be specified by the relevant appliance standards, as applicable	59
Annex BB (informative) Specific regional requirements in Japan	60
Bibliography	62
Figure 101 – Pulse spark generation	23
Figure H.101 – Voltage variation test	44

Table 1 (7.2 of the previous edition 3) – Required information and methods of providing information (1 of 2)	21
Table H.1 (7.2 of the previous edition)	41
Table H.101 – Timing of short-term supply voltage variations	44
Table H.103 – Peak voltages	49
Table H.103 – Test levels for electrostatic discharge	50
Table BBAA.1 – Functional characteristics of burner control systems to be specified by the relevant appliance standards, as applicable	59
Table BB.1 – Comparison between JIS and adopted international standard	61

INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUTOMATIC ELECTRICAL CONTROLS –**Part 2-5: Particular requirements for automatic
electrical burner control systems****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
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- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 60730-2-5 edition 4.1 contains the fourth edition (2013-11) [documents 72/922/FDIS and 72/929/RVD] and its amendment 1 (2017-08) [documents 72/1084/FDIS and 72/1103/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 60730-2-5 has been prepared by IEC technical committee 72: Automatic electrical controls.

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

This part 2-5 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the fourth edition (2010) of that publication. Consideration may be given to future editions of, or amendments to, IEC 60730-1.

The title of IEC 60730-2-5 Ed. 4 has been updated to the title of IEC 60730-1 Ed. 5.0. However, IEC 60730-2-5 Ed. 4.0 has not been updated in accordance with the technical requirements in IEC 60730-1 Ed. 5.0.

This part 2-5 supplements or modifies the corresponding clauses in IEC 60730-1 so as to convert that publication into the IEC standard: Safety requirements for automatic electrical burner control systems.

Where this part 2-5 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 2-5 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:

- 2.3.127
- 6.11
- 15.7
- 17.16.102.1
- H.26.11.103
- Table H.21, Note 7

In this publication:

- 1) The following print types are used:
 - Requirements proper: in roman type;
 - *Test specifications: in italic type;*
 - Explanatory matter; 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, under the general title *Automatic electrical controls* can be found on the IEC website.

The committee has decided that the contents of the base publication and its amendment 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

The contents of the corrigendum 1 (2023-10) have been included in this copy.

AUTOMATIC ELECTRICAL CONTROLS –

Part 2-5: Particular requirements for automatic electrical burner control systems

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 burner control systems for the automatic control of burners for oil, gas, coal or other combustibles for household and similar use including heating, air conditioning and similar use.~~

~~This part 2-5 is applicable to a complete burner control system and to a separate programming unit. This part 2-5 is also applicable to a separate electronic high voltage ignition source and to a separate flame detector.~~

~~NOTE Separate ignition devices (electrodes, pilot burners, etc.) are not covered by this part 2-5 unless they are submitted as part of a burner control system. Requirements for separate ignition transformers are contained in IEC 60989.~~

~~Throughout this part 2-5, where it can be used unambiguously, the word "system" means "burner control system" and "systems" means "burner control systems".~~

~~Systems utilizing thermoelectric flame supervision are not covered by this part 2-5.~~

~~1.1.1 This part 2-5 applies to the inherent safety, to the manufacturer's declared **operating values**, **operating times** and **operating sequences** where such are associated with burner safety and to the testing of automatic electrical burner control systems used in, on, or in association with, burners.~~

~~NOTE Requirements for specific **operating values**, **operating times** and **operating sequences** are given in the standards for appliances and equipment.~~

~~Systems 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 part 2-5.~~

~~This part 2-5 applies to systems using NTC or PTC thermistors, additional requirements for which are contained in Annex J.~~

~~This part 2-5 does not apply to systems designed exclusively for industrial applications.~~

~~1.1.2 This part 2-5 applies to **manual controls** when such are electrically and/or mechanically integral with **automatic controls**.~~

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

~~Throughout this part 2-5, the word "equipment" means "appliance and equipment".~~

This part of IEC 60730 applies to automatic electrical **burner control systems** for the **automatic control** of burners for oil, gas, coal or other combustibles intended to be used

- for household and similar use,
- in shops, offices, hospitals, farms and commercial and industrial applications.

This International Standard is applicable

- to a complete **burner control system**,
- to a separate **programming unit**,
- to a separate electronic high-voltage **ignition source**,
- to a separate **flame detector** and
- to a separate **high-temperature operation (HTO) detector**.

NOTE 1 Throughout this document, where it can be used unambiguously, the word "system" means "burner control system" and "systems" means "burner control systems".

NOTE 2 Throughout this document, the word "equipment" means "appliance and equipment."

This standard does not apply to thermoelectric flame supervision controls; thermoelectric flame supervision controls are covered by ISO 23551-6.

This document also applies to electrical **burner control systems** intended exclusively for industrial process applications e.g. those applications covered by ISO TC 244 (ISO 13577).

1.1.1 This document applies to the inherent safety, to the declared **operating values**, **operating times** and **operating sequences** where such are associated with burner safety and to the testing of automatic electrical **burner control systems** used in, on, or in association with, burners.

NOTE Requirements for specific **operating values**, **operating times** and **operating sequences** are given in the standards for appliances and equipment.

1.1.2 This document applies to AC or DC powered systems with a rated voltage not exceeding 660 V AC or 600 V DC.

1.1.3 This document does not take into account the **response value** of an **automatic action** of a **control**, if such a **response value** is dependent upon the method of mounting the **control** 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 applies.

1.1.4 This document applies also to systems incorporating **electronic devices**, requirements for which are contained in Annex H.

1.1.5 This document applies to systems using NTC or PTC thermistors, additional requirements for which are contained in Annex J.

1.1.6 This document includes systems responsive to flame properties and temperature for HTO.

1.2 Replacement:

~~This part 2-5 applies to systems with a rated voltage not exceeding 660 V and with a rated current not exceeding 63 A.~~

1.3 Replacement:

~~This part 2-5 does not take into account the response value of an automatic action of a control, if such a response value is dependent upon the method of mounting the control 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 household equipment standard or as determined by the manufacturer applies.~~

~~NOTE This part 2-5 includes systems responsive to flame properties.~~

~~1.4 Replacement:~~

~~This part 2-5 applies also to systems incorporating electronic devices, requirements for which are contained in Annex H.~~

1.5.1.2 Normative references

This clause of Part 1 is applicable except as follows:

Addition:

IEC 60068-2-6, *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60079-20-1:2010, *Explosive atmospheres – Part 20-1: Material characteristics for gas and vapour classification – Test methods and data*

~~IEC 61643-11, Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and test methods~~

ISO 23551-6:2014, *Safety and control devices for gas burners and gas-burning appliances – Particular requirements – Part 6: Thermoelectric flame supervision controls*

Replacement:

IEC 60127-1:2015, *Miniature fuses – Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links*

FINAL VERSION

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CONTENTS

FOREWORD	4
1 Scope and normative references	7
2 Terms and definitions	8
3 General requirements	15
4 General notes on tests	16
5 Rating	16
6 Classification	16
7 Information	18
8 Protection against electric shock	21
9 Provision for protective earthing	21
10 Terminals and terminations	21
11 Constructional requirements	22
12 Moisture and dust resistance	28
13 Electric strength and insulation resistance	28
14 Heating	29
15 Manufacturing deviation and drift	29
16 Environmental stress	31
17 Endurance	31
18 Mechanical strength	34
19 Threaded parts and connections	34
20 Creepage distances, clearances and distances through solid insulation	34
21 Resistance to heat, fire and tracking	35
22 Resistance to corrosion	35
23 Electromagnetic compatibility (EMC) requirements – Emission	35
24 Components	35
25 Normal operation	35
26 Electromagnetic compatibility (EMC) requirements – Immunity	35
27 Abnormal operation	35
28 Guidance on the use of electronic disconnection	35
Annex H (normative) Requirements for electronic controls	36
Annex J (normative) Requirements for thermistor elements and controls using thermistors	48
Annex AA (informative) Functional characteristics of burner control systems to be specified by the relevant appliance standards, as applicable	49
Annex BB (informative) Specific regional requirements in Japan	50
Bibliography	51
Figure 101 – Pulse spark generation	21
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Table H.1 (7.2 of the previous edition)	37
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Table H.103 – Peak voltages	42
Table H.103 – Test levels for electrostatic discharge	43
Table AA.1 – Functional characteristics of burner control systems to be specified by the relevant appliance standards, as applicable	49
Table BB.1 – Comparison between JIS and adopted international standard	50

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