

#### SVENSK STANDARD SS-EN 60730-2-2

Fastställd Utgåva Sida Ingår i

2002-05-22 2 1 (1+24) SEK Område 72

Svenska Elektriska Kommissionen, SEK

© Copyright SEK. Reproduction in any form without permission is prohibited.

# Automatiska elektriska styr- och reglerdon för hushållsbruk – Del 2-2: Särskilda fordringar på termiska motorskydd

Automatic electrical controls for household and similar use – Part 2-2: Particular requirements for thermal motor protectors

Som svensk standard gäller europastandarden EN 60730-2-2:2002. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60730-2-2:2002.

#### Nationellt förord

Europastandarden EN 60730-2-2:2002

består av:

- europastandardens ikraftsättningsdokument, utarbetat inomCENELEC
- IEC 60730-2-2, Second edition, 2001 Automatic electrical controls for household and similar use - Part 2-2: Particular requirements for thermal motor protectors

utarbetad inom International Electrotechnical Commission, IEC.

Standarden skall användas tillsammans med tidigare utgiven svensk standard SS-EN 60730-1, utgåva 3, 2001.

SS-EN 60730-2-2, utgåva 1, 1992, SS-EN 60730-2-2/A11, utgåva 1, 1995, SS-EN 60730-2-2/A1, utgåva 1, 1997, SS-EN 60730-2-2/A2, utgåva 1, 1997 och SS-EN 60730-2-2 C1, utgåva 1, 2001, gäller ej fr o m 2009-03-01.

ICS 97.120

## **EUROPEAN STANDARD**

## EN 60730-2-2

# NORME EUROPÉENNE

## **EUROPÄISCHE NORM**

March 2002

ICS 97.120

Supersedes EN 60730-2-2:1991 + A1:1997 + A2:1997 + A11:1995

English version

# Automatic electrical controls for household and similar use Part 2-2: Particular requirements for thermal motor protectors (IEC 60730-2-2:2001, modified)

Dispositifs de commande électrique automatiques à usage domestique et analogue Partie 2-2: Règles particulières pour les dispositifs thermiques de protection des moteurs (CEI 60730-2-2:2001, modifiée)

Automatische elektrische Regel- und Steuergeräte für den Hausgebrauch und ähnliche Anwendungen Teil 2-2: Besondere Anforderungen an thermisch wirkende Motorschutzeinrichtungen (IEC 60730-2-2:2001, modifiziert)

This European Standard was approved by CENELEC on 2002-03-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, 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 text of document 72/526/FDIS, future edition 2 of IEC 60730-2-2, prepared by IEC TC 72, Automatic controls for household use, was submitted to the IEC-CENELEC parallel vote. Together with common modifications prepared by the Technical Committee CENELEC TC 72, Automatic controls for household use, it was approved by CENELEC as EN 60730-2-2 on 2002-03-01.

This European Standard supersedes EN 60730-2-2: 1991 and its amendments A11:1995, A1:1997 and A2:1997.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting

(dop)

2002-12-01

latest date by which the national standards conflicting
 with the EN have to be withdrawn
 (dow) 2009-03-01

This Part 2-2 is to be used in conjunction with EN 60730-1 2000: Automatic electrical controls for household and similar use – Part 1: General requirements, and its amendments. Consideration may be given to future editions of EN 60730-1.

This Part 2-2 supplements or modifies the corresponding clauses of EN 60730-1 so as to convert it into the European Standard: Particular requirements for thermal motor protectors.

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

Where reference is made to other international or harmonized standards, the edition of that standard quoted in Annex ZA (normative) is applicable.

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

There are no national deviations from this European Standard other than those listed in Annex ZC of EN 60730-1.

In this standard

- 1) The following print types are used:
  - Requirements proper: in roman type;
  - Test specifications: in italic type;
  - Explanatory matter: in small roman type.
- 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.

Annexes designated "normative" are part of the body of the standard. Annexes designated "informative" are given for information only. In this standard, annex ZA is normative and annexes D, AA and BB are informative. Annex ZA has been added by CENELEC.

#### **Endorsement notice**

The text of the International Standard IEC 60730-2-2:2001 was approved by CENELEC as a European Standard with agreed common modifications as given below.

# Annex ZA

(normative)

# Normative references to international publications with their corresponding European publications

Addition to annex ZA of EN 60730-1:2000

<u>Publication</u>	<u>Year</u>	<u>Title</u>	EN/HD	<u>Year</u>
IEC 60034-11	1978	Rotating electrical machines Part 11: Built-in thermal protection – Chapter 1: Rules for protection of rotating electrical machines	-	-

### CONTENTS

1	Scope	9
2	Definitions	11
3	General requirements	11
4	General notes on tests	11
5	Rating	11
6	Classification	11
7	Information	13
8	Protection against electric shock	15
9	Provision for protective earthing	15
10	Terminals and terminations	15
11	Constructional requirements	15
12	Moisture and dust resistance	17
13	Electric strength and insulation resistance	17
14	Heating	17
15	Manufacturing deviation and drift	19
16	Environmental stress	19
17	Endurance	19
18	Mechanical strength	21
19	Threaded parts and connections	21
20	Creepage distances, clearances and distances through solid insulation	23
21	Resistance to heat, fire and tracking	23
22	Resistance to corrosion	25
23	Electromagnetic compatibility (EMC) requirements – emission	25
24	Components	25
25	Normal operation	25
26	Electromagnetic compatibility (EMC) requirements - immunity	25
27	Abnormal operation	25
28	Guidance on the use of electronic disconnection	25
Anı	nex C (normative) Cotton used for mercury switch test	27
Anı	nex D (informative) Heat, fire and tracking	27
Anı	nex E (normative) Circuit for measuring leakage current	27
Anı	nex H (normative) Requirements for electronic controls	27
	nex AA (informative) Testing of the combination of motor and thermal motor	
•	tectors.	29
	nex BB (informative) General comments on thermal motor protectors which may p reduce testing	13
	p 104400 tottiig	

#### AUTOMATIC ELECTRICAL CONTROLS FOR HOUSEHOLD AND SIMILAR USE -

#### Part 2-2: Particular requirements for thermal motor protectors

#### 1 Scope

This clause of Part 1 is replaced by the following:

**1.1** This part of IEC 60730 applies to the partial evaluation of thermal motor protectors, as defined in IEC 60730-1, for household and similar use, including heating, air conditioning and similar applications.

A thermal motor protector is an integrated control which is dependent on its correct mounting and fixing in or on a motor and which can only be fully tested in combination with the relevant motor.

Requirements concerning the testing of the combination of motor and thermal motor protector are given in annex AA for information and include requirements taken from other IEC standards.

This part of IEC 60730 applies to thermal motor protectors using thermistors (NTC, PTC), additional requirements for which are contained in annex J of part 1.

**1.1.1** 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 thermal motor protectors used in or on household or similar equipment.

This standard is also applicable to thermal motor protectors for appliances within the scope of IEC 60335-1.

Throughout this standard, the word "equipment" means "appliance and equipment".

Throughout this standard, the words "not applicable" mean that the test is not applicable to the evaluation of the thermal motor protector submitted separately. However, the test may be applicable to the evaluation of the thermal motor protector in combination with the motor.

Thermal motor protectors 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.

This standard does not apply to thermal motor protectors designed exclusively for industrial applications.

- **1.1.2** This standard does not apply to other means of motor protection.
- 1.1.3 This standard does not apply to a manual device for opening the circuit.
- **1.1.4** This standard does not apply to thermal motor protectors for hermetic or semi-hermetic motor compressors.

NOTE For such devices, IEC 60730-2-4 is applicable. 1

**1.2** This standard applies to thermal motor protectors for use with electric motors with a rated voltage equal to or less than 690 V and a rated output of 11 kW or less.

#### 1.5 Normative references

This subclause of part 1 is applicable.

<sup>1</sup> IEC 60730-2-4:2001, Automatic electrical controls for household and similar use. Part 2: Particular requirements for thermal motor protectors for motor-compressors of hermetic and semi-hermetic type