



SLOVENSKI STANDARD
SIST EN 60335-2-34:1997

01-junij-1997

Nadomešča:

SIST HD 277 S1:1995/A1:1997

Safety of household and similar electrical appliances - Part 2: Particular requirements for motor-compressors (IEC 335-2-34:1996)

Safety of household and similar electrical appliances -- Part 2-34: Particular requirements for motor-compressors

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke -- Teil 2-34: Besondere Anforderungen für Motorverdichter

Sécurité des appareils électrodomestiques et analogues -- Partie 2-34: Règles particulières pour les moto-compresseurs

Ta slovenski standard je istoveten z: EN 60335-2-34:1996

ICS:

23.140	Kompresorji in pnevmatični stroji	Compressors and pneumatic machines
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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-34

August 1996

ICS 23.140

Supersedes HD 277 S1:1985 and its amendment

Descriptors: Household electrical appliances, motor-compressor, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

English version

**Safety of household and similar electrical appliances
Part 2: Particular requirements for motor-compressors
(IEC 335-2-34:1996)**

Sécurité des appareils domestiques et
analogues
Partie 2: Règles particulières pour les
moto-compresseurs
(CEI 335-2-34:1996)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2: Besondere Anforderungen für
Motorverdichter
(IEC 335-2-34:1996)

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This European Standard was approved by CENELEC on 1996-07-02. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, 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 61C/74/FDIS, future second edition of IEC 335-2-34, prepared by SC 61C of the IEC Technical Committee 61 was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60335-2-34 on 1996-07-02.

The following dates are applicable:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1997-04-01
- date on which national standards conflicting with the EN have to be withdrawn (dow) 1999-04-01

For products which have complied with HD 277 S1:1985 and its amendment A2:1995 before 1999-04-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2004-04-01.

This standard has to be used in conjunction with EN 60335-1, Safety of household and similar electrical appliances, Part 1: General requirements. It was established on the basis of the 1994 edition of that standard. Amendments and revisions of part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of part 1.

This part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for electric motor compressors.

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

Subclauses, notes and figures which are additional to those in part 1 are numbered starting with 101. Annexes which are additional to those in part 1 are lettered AA, BB, etc.

There are no special national conditions causing a deviation from this European Standard, other than those listed in annex ZA to EN 60335-1.

There are no national deviations from this European Standard, other than those listed in annex ZB to EN 60335-1.

NOTE - The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Words in **bold** in the text are defined in clause 2. When a definition of part 1 concerns an adjective, the adjective and the associated noun are also in bold.

Endorsement notice

The text of the International Standard IEC 335-2-34:1996 was approved by CENELEC as a European Standard without any modification.

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

335-2-34

Deuxième édition
Second edition
1996-07

**Sécurité des appareils domestiques
et analogues**

**Partie 2:
Règles particulières pour
les moto-compresseurs**

(standards.iteh.ai)

**Safety of household and similar
electrical appliances**

**Part 2:
Particular requirements for
motor-compressors**

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International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – Part 2: Particular requirements for motor-compressors

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning Standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This part of International Standard IEC 335 has been prepared by sub-committee 61C: Household appliances for refrigeration, of IEC technical committee 61: Safety of household and similar electrical appliances.

It forms the second edition of IEC 335-2-34 and replaces the first edition, published in 1980, and its amendments.

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

FDIS	Report on voting
61C/74/FDIS	61C/94/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.

Annex AA forms an integral part of this standard.

Annex BB is for information only.

This part 2 is to be used in conjunction with the latest edition of IEC 335-1 and its amendments. It was established on the basis of the third edition (1991) of that publication, and its amendment 1 (1994).

This part 2 supplements or modifies the corresponding clauses in IEC 335-1, so as to convert that publication into the IEC standard: Safety requirements for electrical motor-compressors.

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

NOTES

1 The following print types are used:

- Requirements: in roman type;
- *Test specifications: in italic type;*
- Notes: in small roman type.
- Words in **bold** in the text are defined in clause 2.

2 Subclauses, notes and figures which are additional to those in part 1 are numbered starting from 101; additional annexes are lettered AA, BB, etc.

The following differences exist in some countries:

- 7.1: The locked-rotor current marking is required (USA).
- 22.7: Different pressure test values are required (USA).

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INTRODUCTION

Addition:

Testing according to this standard is an option and cannot be required as a precondition for testing the complete appliance, for example by reference to clause 24. However, testing of the appliance might be reduced if incorporated **motor-compressors** comply with this standard.

If the testing of the **motor-compressors** includes testing according to annex AA, temperatures of **motor-compressor** windings and **housing**, and other parts related to the **motor-compressor** (terminals, wiring, insulating materials etc.), are not measured when the complete appliance is tested.

These requirements apply to sealed (hermetic and semi-hermetic type) **motor-compressors** and their associated starting and protection systems, tested separately under the most severe conditions which, within reasonable limits, could occur in the applications for which they are used.

In particular, the construction details, locked-rotor testing, etc, may be done separately on the **motor-compressor**, thereby eliminating the need for inspection and testing when the **motor-compressor** is applied to many different appliances, and factory-built assemblies.

Operational tests may also be conducted on the **motor-compressor** separately in certain instances. The specifications for this type testing are provided in annex AA. However, the tests of the existing standard relevant to the kind of application such as IEC 335-2-24, IEC 335-2-40 and IEC 335-2-57, may need to be conducted on the final application and used as the final determination of acceptability.

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SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – Part 2: Particular requirements for motor-compressors

1 Scope

This clause of part 1 is replaced by:

This standard deals with the safety of sealed (hermetic and semi-hermetic type) **motor-compressors** intended for use in equipment for household and similar purposes and which conform with the standards applicable to such equipment. It applies to **motor-compressors** tested separately, under the most severe conditions which may be expected to occur in normal use, their rated voltage being not more than 250 V for single-phase motor-compressors and 480 V for other **motor-compressors**.

NOTES

1 Examples of equipment which contain **motor-compressors** are:

- refrigerators, food freezers and ice makers (IEC 335-2-24);
- air-conditioners, electric heat pumps and dehumidifiers (IEC 335-2-40);
- ice-cream appliances (IEC 335-2-57);
- dispensing and vending machines (IEC 335-2-75);
- factory-built assemblies for transferring heat in applications for refrigerating, air-conditioning or heating purposes or a combination of such purposes.

2 This standard does not supersede the requirements of standards relevant to the particular appliance in which the **motor-compressor** is used. However, if the **motor-compressor** type used complies with this standard, the tests for **motor-compressors** specified in the particular appliance standard may not need to be made in the particular appliance or assembly.

So far as is practicable, this standard deals with the common hazards presented by appliances which are encountered by all persons in and around the home.

This standard does not in general take into account:

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

NOTES

3 Requirements are under consideration for the use of **motor-compressors** with flammable refrigerants.

4 Attention is drawn to the fact that:

- for **motor-compressors** intended to be used in appliances in vehicles or on board ships, additional requirements may be necessary;
- in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities.

5 This standard does not apply to:

- **motor-compressors** designed exclusively for industrial purposes;
- **motor-compressors** intended to be installed in a machine room;
- **motor-compressors** used in appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).

2 Definitions

This clause of part 1 is applicable except as follows:

2.2.101 motor-compressor: Appliance consisting of the mechanical mechanism of the compressor and the motor, both of which are enclosed in the same sealed housing, with no external shaft, and with the motor operating in a refrigerant atmosphere with or without oil. The **housing** may be permanently sealed such as by welding or brazing (**hermetic motor-compressor**) or may be sealed by gasketed joints (**semi-hermetic motor-compressor**). The terminal box, a terminal box cover, and other electrical components may be included. Hereafter the term **motor-compressor** will be used, whether it be **hermetic motor-compressor** or **semi-hermetic motor-compressor**.

2.2.102 housing: Sealed part of the **motor-compressor** enclosure, which contains the compressor mechanism and the motor, and which is subjected to refrigerant pressures.

2.2.103 thermal motor-protector: Automatic control, built in or fitted on a **motor-compressor**, that is specifically intended to protect the **motor-compressor** against over-heating due to running overload and failure to start. The control carries **motor-compressor** current and is sensitive to **motor-compressor** temperature and current.

NOTE – The control is capable of being reset (either manually or automatically) when its temperature falls to the reset value.

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2.2.104 starting relay: Electrically operated control intended for integration or incorporation on a **motor-compressor** and used within the **motor-compressor** circuit to control the starting winding for the purpose to start single-phase **motor-compressors**.

2.2.105 application category: Back pressure relative to the evaporation temperature range over which the **motor-compressor** operates.

For the purpose of this standard, the following classifications of **application categories** are made relative to the evaporation temperature range:

- **low back pressure (LBP):** denotes an evaporation temperature range from -35 °C (or lower, if necessary) to -15 °C ;
- **medium back pressure (MBP):** denotes an evaporation temperature range from -20 °C to 0 °C ;
- **high back pressure (HBP):** denotes an evaporation temperature range from -5 °C to $+15\text{ °C}$ (or greater, if necessary).