



IEC 60335-2-34

Edition 7.0 2024-11  
COMMENTED VERSION

# INTERNATIONAL STANDARD



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**Household and similar electrical appliances – Safety –  
Part 2-34: Particular requirements for motor-compressors**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

#### Part 2-34: Particular requirements for motor-compressors

#### 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.
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**This commented version (CMV) of the official standard IEC 60335-2-34:2024 edition 7.0 allows the user to identify the changes made to the previous IEC 60335-2-34:2021 edition 6.0. Furthermore, comments from IEC SC 61C experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.**

**A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.**

**This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.**

IEC 60335-2-34 has been prepared by subcommittee 61C: Safety of refrigeration appliances for household and commercial use, of IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This seventh edition cancels and replaces the sixth edition published in 2021. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) alignment with IEC 60335-1:2020;
- b) in the scope added the rating up to 600 V (Clause 1);
- c) the definition of design pressure has been changed in maximum allowable pressure (3.1.101, 7.102, 22.7);
- d) introduction of maximum load conditions (MLC) as declared by the manufacturer (3.1.103, 5.6, 7.12, Annex AA);
- e) transcritical back pressure categories (R-744) have been introduced (3.1.102, Table AA.1, Table AA.2);
- f) new definition of coilette has been introduced (3.8.103);
- g) new definition of bypass valve has been introduced (3.8.104);
- h) the evaluation of motor-compressors using a motor-compressor control system has been clarified (6.101, 6.103, 6.104, 19.1);
- i) modification of electric strength test has been added (16.2);
- j) reference to the fatigue test has been deleted (Clause 18);
- k) compliance for pressure tests has been updated (22.7, Annex EE);
- l) reference for the motorette has been transferred from Annex BB to the new Annex FF;
- m) annex for insulation materials and parts has been updated and tie cord relaxation has been removed (Annex CC);
- n) new annex for motorette or coilette has been introduced (Annex FF).

The text of this International Standard is based on the following documents:

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all parts of the IEC 60335 series, under the general title *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Particular requirements for motor-compressors.

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NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
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- additional annexes are lettered AA, BB, etc.

NOTE 3 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 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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- withdrawn, or
- revised.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The following differences exist in the countries indicated below.

- 7.1: The locked-rotor current marking is required for some motor-compressors (USA).
- 22.7: Different test pressures are used (Japan, USA).

<p><b>IMPORTANT – The "colour inside" logo on the cover page of this document 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.</b></p>
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## INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 supporting documents on the IEC website

<https://www.iec.ch/tc61/supportingdocuments>

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules ~~may~~ can differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 ~~Horizontal and generic standards~~ Horizontal publications, basic safety publications and group safety publications covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. ~~For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.~~

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard ~~may~~ can be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, ~~may~~ can be considered to comply with the standard.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

- IEC standards published by TC 59 concerning methods of measuring performance;
- CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
- CISPR 14-2 concerning electromagnetic immunity;
- IEC standards published by TC 111 concerning environmental matters

If testing of the **motor-compressor** includes testing in accordance with Annex AA, temperatures of the **motor-compressor** windings, **housing** and other parts related to the **motor-compressor**, such as terminals, internal wiring and insulating materials, are not measured when the complete appliance in which the **motor-compressor** is used is tested.

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

In particular, the construction detail inspection and locked-rotor testing ~~may~~ can 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~~ can also be conducted on the **motor-compressor** separately in certain circumstances. The specification for this type testing is provided in Annex AA. However, it is possible that the tests of the existing standards relevant to the given kind of application, such as IEC 60335-2-24 and IEC 60335-2-40, ~~may need to~~ will be conducted on the ~~final application~~ end product and used as the final determination of acceptability.



# HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

## Part 2-34: Particular requirements for motor-compressors

### 1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of sealed (hermetic and semi-hermetic type) **motor-compressors**, their protection and control systems, if any, which are 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 that ~~may~~ can be expected to occur in normal use, their **rated voltage** being not more than 250 V for single-phase **motor-compressors** and 600 V for ~~other~~ multi-phase, 600 V direct-current (DC) **motor-compressors**.

This standard also covers

- multi-speed **motor-compressors**, that are **motor-compressors**, the speed of which can be set to different values;
- variable capacity **motor-compressors** that are **motor-compressors** where the capacity of the compressor is controlled at fixed speeds.

NOTE 101 Examples of equipment which contain **motor-compressors** are

- tumble dryers (IEC 60335-2-11);
- refrigerating appliances, ice-cream appliances and ice-makers (IEC 60335-2-24);
- electrical heat pumps, air-conditioners and dehumidifiers (IEC 60335-2-40);
- commercial dispensing appliances and vending machines (IEC 60335-2-75);
- commercial refrigerating appliances and ice-makers with an incorporated or remote refrigerant unit or compressor (IEC 60335-2-89);
- ~~electrical~~ refrigerating equipment for measurement, control, and laboratory use (IEC 61010-2-011);
- professional ice-cream makers (IEC 60335-2-118);
- ~~refrigerating~~ professional systems and heat pumps (ISO 5149-2);

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, it will not be necessary for the tests for the **motor-compressor** specified in the particular appliance standard ~~may not need~~ to be made in the particular appliance or assembly. If the **motor-compressor control system** is associated with the particular appliance control system, additional tests could be necessary on the ~~final appliance~~ end product.

So far as is practical, this standard deals with the common hazards presented by **motor-compressors** used in appliances which are encountered by all persons in and around the home. However, it does not in general take into account

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

NOTE 102 Attention is drawn to the fact that

- for **motor-compressors** intended to be used in appliances in vehicles or on board ships, additional requirements could be necessary;
- **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), additional requirements could 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.

This standard does not apply to

- **motor-compressors** designed exclusively for industrial purposes<sup>1</sup>.
- ~~– **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).~~

~~NOTE 103 If **motor-compressors** for refrigerant R 744 used in appliances with a **transcritical refrigeration system** are equipped with **pressure relief devices**, compliance with the requirements for these devices is checked during the tests on the final appliance.~~

## 2 Normative references

This clause of Part 1 is applicable, except as follows.

*Addition:*

IEC 60079-1:2014, *Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures "d"*

IEC 60079-15:2017, *Explosive atmospheres – Part 15: Equipment protection by type of protection "n"*

IEC 60851-4:2016, *Winding wires – Test methods – Part 4: Chemical properties*

IEC 60851-5:2008, *Winding wires – Test methods – Part 5: Electrical properties*

IEC 60851-5:2008/AMD1:2011

IEC 60851-5:2008/AMD2:2019<sup>1</sup>

ISO 817:2014, *Refrigerants – Designation and safety classification*

ISO 817:2014/AMD1:2017

ISO 817:2014/AMD2:2021

ISO 7010:2019, *Graphical symbols – Safety colours and safety signs – Registered safety signs*

<sup>1</sup> ~~There exists A consolidated edition 4.2:2019 that includes Edition 4 and its Amendment 1 and Amendment 2. A consolidated version of this document exists, comprising IEC 60851-5:2008, IEC 60851-5:2008/AMD1:2011 and IEC 60851-5:2008/AMD2:2019.~~

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



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**Household and similar electrical appliances – Safety –  
Part 2-34: Particular requirements for motor-compressors**

**Appareils électrodomestiques et analogues – Sécurité –  
Partie 2-34: Exigences particulières pour les motocompresseurs**

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- revised.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The following differences exist in the countries indicated below.

- 7.1: The locked-rotor current marking is required for some motor-compressors (USA).
- 22.7: Different test pressures are used (Japan, USA).

**IMPORTANT – The "colour inside" logo on the cover page of this document 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.**



## INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 supporting documents on the IEC website

<https://www.iec.ch/tc61/supportingdocuments>

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules can differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 Horizontal publications, basic safety publications and group safety publications covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard can be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, can be considered to comply with the standard.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

- IEC standards published by TC 59 concerning methods of measuring performance;
- CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
- CISPR 14-2 concerning electromagnetic immunity;
- IEC standards published by TC 111 concerning environmental matters

If testing of the **motor-compressor** includes testing in accordance with Annex AA, temperatures of the **motor-compressor** windings, **housing** and other parts related to the **motor-compressor**, such as terminals, internal wiring and insulating materials, are not measured when the complete appliance in which the **motor-compressor** is used is tested.

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

In particular, the construction detail inspection and locked-rotor testing can 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 can also be conducted on the **motor-compressor** separately in certain circumstances. The specification for this type testing is provided in Annex AA. However, it is possible that the tests of the existing standards relevant to the given kind of application, such as IEC 60335-2-24 and IEC 60335-2-40, will be conducted on the end product and used as the final determination of acceptability.

## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-34: Particular requirements for motor-compressors

#### 1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of sealed (hermetic and semi-hermetic type) **motor-compressors**, their protection and control systems, if any, which are 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 that can be expected to occur in normal use, their **rated voltage** being not more than 250 V for single-phase **motor-compressors** and 600 V for multi-phase, 600 V direct-current (DC) **motor-compressors**.

This standard also covers

- multi-speed **motor-compressors**, that are **motor-compressors**, the speed of which can be set to different values;
- variable capacity **motor-compressors** that are **motor-compressors** where the capacity of the compressor is controlled at fixed speeds.

NOTE 101 Examples of equipment which contain **motor-compressors** are

- tumble dryers (IEC 60335-2-11);
- refrigerating appliances, ice-cream appliances and ice-makers (IEC 60335-2-24);
- electrical heat pumps, air-conditioners and dehumidifiers (IEC 60335-2-40);
- commercial dispensing appliances and vending machines (IEC 60335-2-75);
- commercial refrigerating appliances and ice-makers with an incorporated or remote refrigerant unit or compressor (IEC 60335-2-89);
- refrigerating equipment for measurement, control, and laboratory use (IEC 61010-2-011);
- professional ice-cream makers (IEC 60335-2-118);
- professional systems and heat pumps (ISO 5149-2);

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, it will not be necessary for the tests for the **motor-compressor** specified in the particular appliance standard to be made in the particular appliance or assembly. If the **motor-compressor control system** is associated with the particular appliance control system, additional tests could be necessary on the end product.

So far as is practical, this standard deals with the common hazards presented by **motor-compressors** used in appliances which are encountered by all persons in and around the home. However, it does not in general take into account

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

NOTE 102 Attention is drawn to the fact that

- for **motor-compressors** intended to be used in appliances in vehicles or on board ships, additional requirements could be necessary;
- **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), additional requirements could 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.

This standard does not apply to

- **motor-compressors** designed exclusively for industrial purposes.

## 2 Normative references

This clause of Part 1 is applicable, except as follows.

*Addition:*

IEC 60079-1:2014, *Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures "d"*

IEC 60079-15:2017, *Explosive atmospheres – Part 15: Equipment protection by type of protection "n"*

IEC 60851-4:2016, *Winding wires – Test methods – Part 4: Chemical properties*

IEC 60851-5:2008, *Winding wires – Test methods – Part 5: Electrical properties*

IEC 60851-5:2008/AMD1:2011

IEC 60851-5:2008/AMD2:2019<sup>1</sup>

ISO 817:2014, *Refrigerants – Designation and safety classification*

ISO 817:2014/AMD1:2017

ISO 817:2014/AMD2:2021

ISO 7010:2019, *Graphical symbols – Safety colours and safety signs – Registered safety signs*

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<sup>1</sup> A consolidated version of this document exists, comprising IEC 60851-5:2008, IEC 60851-5:2008/AMD1:2011 and IEC 60851-5:2008/AMD2:2019.

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## COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

### APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – SÉCURITÉ –

#### Partie 2-34: Exigences particulières pour les motocompresseurs

##### AVANT-PROPOS

- 1) La Commission Électrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
- 2) Les décisions ou accords officiels de l'IEC concernant les questions techniques représentent, dans la mesure du possible, un accord international sur les sujets étudiés, étant donné que les Comités nationaux de l'IEC intéressés sont représentés dans chaque comité d'études.
- 3) Les Publications de l'IEC se présentent sous la forme de recommandations internationales et sont agréées comme telles par les Comités nationaux de l'IEC. Tous les efforts raisonnables sont entrepris afin que l'IEC s'assure de l'exactitude du contenu technique de ses publications; l'IEC ne peut pas être tenue responsable de l'éventuelle mauvaise utilisation ou interprétation qui en est faite par un quelconque utilisateur final.
- 4) Dans le but d'encourager l'uniformité internationale, les Comités nationaux de l'IEC s'engagent, dans toute la mesure possible, à appliquer de façon transparente les Publications de l'IEC dans leurs publications nationales et régionales. Toutes divergences entre toutes Publications de l'IEC et toutes publications nationales ou régionales correspondantes doivent être indiquées en termes clairs dans ces dernières.
- 5) L'IEC elle-même ne fournit aucune attestation de conformité. Des organismes de certification indépendants fournissent des services d'évaluation de conformité et, dans certains secteurs, accèdent aux marques de conformité de l'IEC. L'IEC n'est responsable d'aucun des services effectués par les organismes de certification indépendants.
- 6) Tous les utilisateurs doivent s'assurer qu'ils sont en possession de la dernière édition de cette publication.
- 7) Aucune responsabilité ne doit être imputée à l'IEC, à ses administrateurs, employés, auxiliaires ou mandataires, y compris ses experts particuliers et les membres de ses comités d'études et des Comités nationaux de l'IEC, pour tout préjudice causé en cas de dommages corporels et matériels, ou de tout autre dommage de quelque nature que ce soit, directe ou indirecte, ou pour supporter les coûts (y compris les frais de justice) et les dépenses découlant de la publication ou de l'utilisation de cette Publication de l'IEC ou de toute autre Publication de l'IEC, ou au crédit qui lui est accordé.
- 8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
- 9) L'IEC attire l'attention sur le fait que la mise en application du présent document peut entraîner l'utilisation d'un ou de plusieurs brevets. L'IEC ne prend pas position quant à la preuve, à la validité et à l'applicabilité de tout droit de brevet revendiqué à cet égard. À la date de publication du présent document, l'IEC n'avait pas reçu notification qu'un ou plusieurs brevets pouvaient être nécessaires à sa mise en application. Toutefois, il y a lieu d'avertir les responsables de la mise en application du présent document que des informations plus récentes sont susceptibles de figurer dans la base de données de brevets, disponible à l'adresse <https://patents.iec.ch>. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets et de ne pas avoir signalé leur existence.

L'IEC 60335-2-34 a été établie par le sous-comité 61B: Sécurité des appareils de réfrigération à usage domestique et commercial, du comité d'études 61 de l'IEC: Sécurité des appareils électrodomestiques et analogues. Il s'agit d'une Norme internationale.

Cette septième édition annule et remplace la sixième édition parue en 2021. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) le texte a été aligné sur l'IEC 60335-1:2020;
- b) la valeur assignée de 600 V a été ajoutée au domaine d'application (Article 1);
- c) la définition de la pression nominale a été remplacée par la pression maximale admissible (3.1.101, 7.102, 22.7);
- d) les conditions de charge maximale (MLC, *Maximum Load Conditions*) déclarées par le fabricant ont été introduites (3.1.103, 5.6, 7.12, Annexe AA);
- e) les catégories de contre-pression transcritique (R-744) ont été introduites (3.1.102, Tableau AA.1, Tableau AA.2);
- f) une nouvelle définition de la coquette a été introduite (3.8.103);
- g) une nouvelle définition du clapet de dérivation a été introduite (3.8.104);
- h) l'évaluation des motocompresseurs utilisant un dispositif de commande a été clarifiée (6.101, 6.103, 6.104, 19.1);
- i) la modification de l'essai de rigidité diélectrique a été ajoutée (16.2);
- j) la référence à l'essai d'endurance a été supprimée (Article 18);
- k) la conformité des essais de pression a été mise à jour (22.7, Annexe EE);
- l) la référence à la motorette a été transférée de l'Annexe BB à la nouvelle Annexe FF;
- m) l'annexe relative aux matériaux isolants et parties isolantes a été mise à jour et l'assouplissement concernant les cordons d'attache a été supprimé (Annexe CC);
- n) une nouvelle annexe relative aux motorettes ou coquettes a été introduite (Annexe FF).

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
61C/924/FDIS	61C/926/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

La version française de cette norme n'a pas été soumise au vote.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). Les principaux types de documents développés par l'IEC sont décrits plus en détail sous [www.iec.ch/publications](http://www.iec.ch/publications).

Une liste de toutes les parties de la série IEC 60335, publiées sous le titre général *Appareils électrodomestiques et analogues – Sécurité*, se trouve sur le site web de l'IEC.

La présente partie 2 doit être utilisée conjointement avec la dernière édition de l'IEC 60335-1 et ses amendements sauf si cette édition l'exclut. Dans ce cas, la dernière édition qui n'exclut pas la présente partie 2 est utilisée. Elle a été établie sur la base de la sixième édition (2020) de cette norme.

NOTE 1 L'expression "la Partie 1" utilisée dans la présente norme fait référence à l'IEC 60335-1.

La présente partie 2 complète ou modifie les articles correspondants de l'IEC 60335-1, de façon à transformer cette publication en norme IEC: Exigences particulières pour les motocompresseurs.



Lorsqu'un paragraphe particulier de la Partie 1 n'est pas mentionné dans cette partie 2, ce paragraphe s'applique pour autant que cela soit raisonnable. Lorsque la présente norme mentionne "addition", "modification" ou "remplacement", le texte correspondant de la Partie 1 doit être adapté en conséquence.

NOTE 2 Le système de numérotation suivant est utilisé:

- les paragraphes, tableaux et figures qui s'ajoutent à ceux de la Partie 1 sont numérotés à partir de 101;
- à l'exception de celles qui sont dans un nouveau paragraphe ou de celles qui concernent des notes de la Partie 1, les notes sont numérotées à partir de 101, y compris celles des articles ou paragraphes qui sont remplacés;
- les annexes qui sont ajoutées sont désignées AA, BB, etc.

NOTE 3 Les caractères d'imprimerie suivants sont utilisés:

- exigences: caractères romains;
- *modalités d'essais: caractères italiques;*
- notes: petits caractères romains.

Les termes en **gras** dans le texte sont définis à l'Article 3. Lorsqu'une définition concerne un adjectif, l'adjectif et le nom associé figurent également en gras.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous [webstore.iec.ch](http://webstore.iec.ch) dans les données relatives au document recherché. À cette date, le document sera

- reconduit,
- supprimé, ou
- révisé.

NOTE 4 L'attention des Comités nationaux est attirée sur le fait que les fabricants d'appareils et les organismes d'essai peuvent avoir besoin d'une période transitoire après la publication d'une nouvelle publication IEC, ou d'une publication amendée ou révisée, pour fabriquer des produits conformes aux nouvelles exigences et pour adapter leurs équipements aux nouveaux essais ou aux essais révisés.

Le comité recommande que le contenu de cette publication soit adopté pour application nationale (obligatoire) au plus tôt 12 mois et au plus tard 36 mois après la date de publication.

Les différences suivantes existent dans les pays indiqués ci-après.

- 7.1: Le marquage du courant à rotor bloqué est exigé pour certains motocompresseurs (États-Unis).
- 22.7: Des pressions d'essai différentes sont utilisées (Japon, États-Unis).

**IMPORTANT – Le logo "colour inside" qui se trouve sur la page de couverture de ce document indique qu'il contient des couleurs qui sont considérées comme utiles à une bonne compréhension de son contenu. Les utilisateurs devraient, par conséquent, imprimer cette publication en utilisant une imprimante couleur.**

## INTRODUCTION

Il a été admis par hypothèse, en établissant la présente Norme internationale, que l'exécution de ses dispositions était confiée à des personnes expérimentées et ayant une qualification appropriée.

Les documents de recommandations concernant l'application des exigences de sécurité pour les appareils peuvent être consultés dans les documents de support du CE 61, accessibles sur le site web de l'IEC à l'adresse:

<https://www.iec.ch/tc61/supportingdocuments>

Cette information est donnée à l'intention des utilisateurs de la présente Norme internationale et ne constitue nullement un remplacement du texte normatif de la présente norme.

La présente norme reconnaît le niveau de protection internationalement accepté contre les dangers électriques, mécaniques, thermiques, liés au feu et au rayonnement des appareils, lorsqu'ils fonctionnent comme en usage normal en tenant compte des instructions du fabricant. Elle couvre également les situations anormales auxquelles on peut s'attendre dans la pratique et elle tient compte de la façon dont les phénomènes électromagnétiques peuvent affecter le fonctionnement sûr des appareils.

La présente norme tient compte autant que possible des exigences de l'IEC 60364, de façon à rester compatible avec les règles d'installation quand l'appareil est raccordé au réseau d'alimentation. Cependant, des règles d'installation nationales peuvent être différentes.

Si un appareil relevant du domaine d'application de la présente norme comporte également des fonctions couvertes par une autre partie 2 de l'IEC 60335, la partie 2 correspondante est appliquée à chaque fonction séparément, dans la limite du raisonnable. Si cela s'applique, l'influence d'une fonction sur les autres fonctions est prise en compte.

Lorsqu'une partie 2 ne comporte pas d'exigences complémentaires pour couvrir les dangers traités dans la Partie 1, la Partie 1 s'applique.

NOTE 1 Cela signifie que les comités d'études responsables pour les parties 2 ont déterminé qu'il n'était pas nécessaire de spécifier des exigences particulières pour l'appareil en question en plus des exigences générales.

La présente norme est une norme de famille de produits traitant de la sécurité d'appareils et a préséance sur les normes horizontales et génériques couvrant le même sujet.

NOTE 2 Les publications horizontales, les publications fondamentales de sécurité et les publications groupées de sécurité couvrant un danger ne s'appliquent pas, parce qu'elles ont été prises en considération lorsque les exigences générales et particulières ont été étudiées pour la série de normes IEC 60335.

Un appareil conforme au texte de la présente norme ne sera pas nécessairement jugé conforme aux principes de sécurité de la norme si, lorsqu'il est examiné et soumis aux essais, il apparaît qu'il présente d'autres caractéristiques qui compromettent le niveau de sécurité visé par ces exigences.

Un appareil utilisant des matériaux ou présentant des modes de construction différents de ceux décrits dans les exigences de la présente norme peut être examiné et soumis aux essais en fonction de l'objectif poursuivi par ces exigences et, s'il est jugé pratiquement équivalent, il peut être estimé conforme aux principes de sécurité de la présente norme.

NOTE 3 Les normes traitant des aspects non relatifs à la sécurité des appareils électrodomestiques sont:

- les normes IEC publiées par le comité d'études 59 concernant les méthodes de mesure de l'aptitude à la fonction;
- les normes CISPR 11 et CISPR 14-1, ainsi que les normes applicables de la série IEC 61000-3 concernant les émissions électromagnétiques;
- la norme CISPR 14-2 concernant l'immunité électromagnétique;
- les normes IEC publiées par le comité d'études 111 concernant l'environnement.

Si les essais du **motocompresseur** incluent les essais de l'Annexe AA, les températures des enroulements du **motocompresseur**, du **boîtier** et des autres pièces associées au **motocompresseur** telles que les bornes, le câblage interne ou l'isolation, ne sont pas mesurées lorsque l'appareil complet dans lequel se trouve le **motocompresseur** est soumis aux essais.

Ces exigences s'appliquent aux **motocompresseurs** étanches (de type hermétique et hermétique accessible) et à leurs dispositifs de démarrage, de contrôle de puissance frigorifique et de protection associés, soumis à l'essai séparément dans les conditions de fonctionnement les plus défavorables du système de réfrigération qui, dans des limites raisonnables, peuvent se produire dans les applications pour lesquelles ils sont utilisés.

En particulier, l'examen des détails de construction et les essais à rotor bloqué peuvent être effectués séparément sur le **motocompresseur**, ce qui élimine la nécessité de soumettre à l'essai et de contrôler le **motocompresseur** lorsqu'il est utilisé sur différents appareils et sur différents ensembles montés en usine.

Les essais opérationnels peuvent également être effectués séparément sur le **motocompresseur** dans certains cas. Les spécifications pour ces essais de type sont fournies à l'Annexe AA. Toutefois, il est possible d'effectuer les essais décrits dans les normes existantes relatives à ce type d'application, comme l'IEC 60335-2-24 et l'IEC 60335-2-40, sur le produit final et d'utiliser ces essais pour la détermination finale d'acceptabilité.

## APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – SÉCURITÉ –

### Partie 2-34: Exigences particulières pour les motocompresseurs

#### 1 Domaine d'application

L'article de la Partie 1 est remplacé par le texte suivant.

La présente partie de l'IEC 60335 traite de la sécurité des **motocompresseurs** étanches (de type hermétique et hermétique accessible) et, le cas échéant, de leurs systèmes de protection et de commande, qui sont destinés à être utilisés sur les appareils électrodomestiques et analogues et qui sont conformes aux normes applicables à de tels matériels. Elle s'applique aux **motocompresseurs** soumis à l'essai séparément, dans les conditions les plus défavorables qui peuvent se produire en usage normal, dont la **tension assignée** est inférieure ou égale à 250 V pour les **motocompresseurs** monophasés et à 600 V pour les **motocompresseurs** multiphasés à courant continu de 600 V.

La présente norme couvre également:

- les **motocompresseurs** à plusieurs vitesses, qui sont des **motocompresseurs** dont la vitesse peut être réglée sur différentes valeurs;
- les **motocompresseurs** à capacité variable, qui sont des **motocompresseurs** dont la capacité du compresseur est contrôlée à des vitesses fixes.

NOTE 101 Des exemples d'appareils équipés de **motocompresseurs** sont:

- les sèche-linge à tambour (IEC 60335-2-11);
- les appareils de réfrigération, les sorbetières et les fabriques de glace (IEC 60335-2-24);
- les pompes à chaleur électriques, les climatiseurs et les déshumidificateurs (IEC 60335-2-40);
- les distributeurs commerciaux avec ou sans moyen de paiement (IEC 60335-2-75);
- les appareils de réfrigération et fabriques de glace à usage commercial avec une unité de fluide frigorigène ou un motocompresseur incorporé(e) ou à distance (IEC 60335-2-89);
- les appareils de réfrigération destinés au mesurage, à la régulation et à un usage en laboratoire (IEC 61010-2-011);
- les fabriques de crème glacée à usage professionnel (IEC 60335-2-118);
- les systèmes et pompes à chaleur à usage professionnel (ISO 5149-2).

La présente norme ne remplace pas les exigences des normes applicables aux appareils dans lesquels sont utilisés les **motocompresseurs**. Toutefois, si le type de **motocompresseur** utilisé est conforme à la présente norme, il n'est pas nécessaire d'effectuer les essais sur l'appareil ou l'ensemble particulier pour les **motocompresseurs** spécifiés dans les normes applicables à ces appareils. Si le **dispositif de commande du motocompresseur** est associé au dispositif de commande d'un appareil particulier, il peut être nécessaire d'effectuer des essais supplémentaires sur le produit final.

Dans la mesure du possible, la présente norme traite des dangers courants que présentent les **motocompresseurs** utilisés dans des appareils et auxquels sont exposés tous les individus situés à l'intérieur et autour de l'habitation. Cependant, cette norme ne tient pas compte en général:

- de l'utilisation des appareils par de jeunes enfants ou des personnes handicapées sans surveillance;
- de l'utilisation des appareils comme jouet par de jeunes enfants.

NOTE 102 L'attention est attirée sur le fait que:

- pour les **motocompresseurs** destinés à être utilisés dans des véhicules ou à bord de navires, des exigences supplémentaires peuvent être nécessaires;
- pour les **motocompresseurs** utilisés dans des appareils destinés à être employés dans des locaux qui présentent des conditions particulières, telles que la présence d'une atmosphère corrosive ou explosive (poussière, vapeur ou gaz), des exigences supplémentaires peuvent être nécessaires;
- dans de nombreux pays, des exigences supplémentaires sont spécifiées par les organismes nationaux de la santé, par les organismes nationaux responsables de la protection des travailleurs et par des organismes similaires.

La présente norme ne s'applique pas

- aux **motocompresseurs** prévus exclusivement pour des usages industriels.

## 2 Références normatives

L'article de la Partie 1 s'applique, avec l'exception suivante.

*Addition:*

IEC 60079-1:2014, *Atmosphères explosives – Partie 1: Protection du matériel par enveloppes antidéflagrantes "d"*

IEC 60079-15:2017, *Atmosphères explosives – Partie 15: Protection du matériel par mode de protection "n"*

IEC 60851-4:2016, *Fils de bobinage – Méthodes d'essai – Partie 4: Propriétés chimiques*

IEC 60851-5:2008, *Fils de bobinage – Méthodes d'essai – Partie 5: Propriétés électriques*

IEC 60851-5:2008/AMD1:2011

IEC 60851-5:2008/AMD2:2019<sup>1</sup>

ISO 817:2014, *Fluides frigorigènes – Désignation et classification de sûreté*

ISO 817:2014/AMD1:2017

ISO 817:2014/AMD2:2021

ISO 7010:2019, *Symboles graphiques – Couleurs de sécurité et signaux de sécurité – Signaux de sécurité enregistrés*

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<sup>1</sup> Il existe une version consolidée de ce document, qui comprend l'IEC 60851-5:2008, l'IEC 60851-5:2008/AMD1:2011 et l'IEC 60851-5:2008/AMD2:2019.