

BSI Standards Publication

Household and similar electrical appliances — Safety

Part 2-34: Particular requirements for motor-compressors

Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

National foreword

This British Standard is the UK implementation of EN IEC 60335-2-34:2023+A12:2025. It is derived from IEC 60335-2-34:2021. It supersedes BS EN IEC 60335-2-34:2023+A11:2023, which will be withdrawn on 31 July 2028.

The start and finish of text introduced or altered by amendment A11 is indicated in the text by tags. Tags indicating changes to text carry the number of the CENELEC amendment. For example, text altered by CENELEC amendment A11 is indicated by ⟦A11⟩ ⟨A11⟩.

The UK participation in its preparation was entrusted to Technical Committee CPL/61, Safety of household and similar electrical appliances.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

This publication has been prepared under a mandate given to the European Standards Organizations by the European Commission and the European Free Trade Association. It is intended to support requirements of the EU legislation detailed in the European Foreword. A European Annex, usually Annex ZA or ZZ, describes how this publication relates to that EU legislation.

For the Great Britain market (England, Scotland and Wales), if UK Government has designated this publication for conformity with UKCA marking (or similar) legislation, it may contain an additional National Annex. Where such a National Annex exists, it shows the correlation between this publication and the relevant UK legislation. If there is no National Annex of this kind, the relevant Annex ZA or ZZ in the body of the European text will indicate the relationship to UK regulation applicable in Great Britain. References to EU legislation may need to be read in accordance with the UK designation and the applicable UK law. Further information on designated standards can be found at www.bsigroup.com/standardsandregulation.

For the Northern Ireland market, UK law will continue to implement relevant EU law subject to periodic confirmation. Therefore Annex ZA/ZZ in the European text, and references to EU legislation, are still valid for this market.

AVA Documents
Document Sharing Hub

UK Government is responsible for legislation. For information on legislation and policies relating to that legislation, consult the relevant pages of www.gov.uk.

© The British Standards Institution 2025
Published by BSI Standards Limited 2025

ISBN 978 0 539 32001 5

ICS 97.040.30

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2024.

Amendments/corrigenda issued since publication

Date	Text affected
31 July 2025	Implementation of CENELEC amendment A12:2025

Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60335-2-34:2023+A12

July 2025

ICS 97.040.30

Supersedes EN 60335-2-34:2013

English Version

Household and similar electrical appliances - Safety - Part 2-34: Particular requirements for motor-compressors (IEC 60335-2-34:2021)

Appareils électrodomestiques et analogues - Sécurité - Partie 2-34: Exigences particulières pour les motocompresseurs (IEC 60335-2-34:2021)

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Teil 2-34: Besondere Anforderungen für Motorverdichter (IEC 60335-2-34:2021)

This European Standard was approved by CENELEC on 2022-09-05. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2023 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

Ref. No. EN IEC 60335-2-34:2023 E

Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

European foreword

This document (EN IEC 60335-2-34:2023) consists of the text of document IEC 60335-2-34:2021, prepared by IEC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-11-05
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2026-05-05

This document supersedes EN 60335-2-34:2013 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document is read in conjunction with EN IEC 60335-2-34:2022/A11:2023.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 60335-2-34:2021 was approved by CENELEC as a European Standard without any modification.

Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

European foreword to amendment A11

This document (EN IEC 60335-2-34:2023/A11:2023) has been prepared by CLC/TC 61 “Safety of household and similar electrical appliances”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-11-05
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2026-05-05

This document is read in conjunction with EN IEC 60335-2-34:2023.

The numbering system for European clauses, subclauses, notes, tables, figures and annexes that are additional to those in the IEC standard are prefixed with the letter “Z”.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

European foreword to amendment A12

This document (EN IEC 60335-2-34:2023/A12:2025) has been prepared by CLC/TC 61 “Safety of household and similar electrical appliances”.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2026-07-31
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2028-07-31

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document is read in conjunction with EN IEC 60335-2-34:2023 and EN IEC 60335-2-34:2023/A11:2023.

The numbering system for European clauses, subclauses, notes, tables, figures and annexes that are additional to those in the IEC standard are prefixed with the letter “Z”.

This document has been prepared under a standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZZA and Annex ZZB, which are integral parts of this document.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

CONTENTS

FOREWORD 4
INTRODUCTION 7
1 Scope 9
2 Normative references 10
3 Terms and definitions 10
4 General requirement 12
5 General conditions for the tests 12
6 Classification 13
7 Marking and instructions 14
8 Protection against access to live parts 15
9 Starting of motor-operated appliances 15
10 Power input and current 16
11 Heating 16
12 Void 16
13 Leakage current and electric strength at operating temperature 16
14 Transient overvoltages 16
15 Moisture resistance 16
16 Leakage current and electric strength 16
17 Overload protection of transformers and associated circuits 16
18 Endurance 17
19 Abnormal operation 17
20 Stability and mechanical hazards 22
21 Mechanical strength 22
22 Construction 22
23 Internal wiring 25
24 Components 26
25 Supply connection and external flexible cords 26
26 Terminals for external conductors 26
27 Provision for earthing 26
28 Screws and connections 26
29 Clearances, creepage distances and solid insulation 26
30 Resistance to heat and fire 28
31 Resistance to rusting 28
32 Radiation, toxicity and similar hazards 28
Annexes 29
Annex C (normative) Ageing test on motors 29
Annex D (normative) Thermal motor protectors 29
Annex AA (normative) Running overload tests for motor-compressors classified as tested with Annex AA 30
Annex BB (normative) Winding wire insulation compatibility tests 34
Annex CC (normative) Tie cords and insulation compatibility tests 38

AVA Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

Annex DD (normative) Non-sparking “n” electrical apparatus and test condition for “dc” devices 40
Annex EE (normative) Fatigue test 41
Bibliography 42

Figure 101 – Supply circuit for the locked-rotor test of a single-phase motor-compressor 28
Figure AA.1 – Substitute refrigeration circuit 33
Figure BB.1 – Motorette components 36
Figure BB.2 – Completely assembled motorette 37

Table 101 – Minimum high side test pressures 23
Table 102 – Minimum low side test pressures 24
Table AA.1 – Substitute refrigeration circuit conditions for operation under maximum load 31
Table AA.2 – Steps for increasing the load on the motor-compressor 32
Table BB.1 – Time temperature heating cycles 35
Table CC.1 – Time temperature heating cycles 39

Documents
Document Sharing Hub
Full document details: BS EN IEC 60335-2-34:2023+A12:2025

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

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.
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.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
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 part of IEC 60335 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.

This sixth edition cancels and replaces the fifth edition published in 2012, Amendment 1:2015 and Amendment 2:2016. This edition constitutes a technical revision.

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

– it aligns the text with IEC 60335-1, Ed 5.2;
– application categories and tests have been extended (3.1.102, Annex AA);
– use of a motorette for winding wire compatibility tests introduced (3.8.102, Annex BB);
– height of the triangle, symbol ISO 7010 W021 has been introduced (7.14);
– some notes are converted to normative text (1, 15.3, 22.21, 23.8, 29.3.4, Figure AA.1);

AVA Documents Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

– note in Subclause 6.101 becomes normative in Clause 11;
– optional pressure endurance test introduced (18.101, Annex EE);
– compatibility test for insulation inside the housing clarified (22.9);
– clarification of clearances inside the housing for motor-compressors suitable for use at altitudes exceeding 2 000 m (29.1);
– normative references and associated text have been updated (24.101, Annex DD);
– breaking strength of tie cord after temperature heating cycle has been updated (Annex CC).

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

Draft	Report on voting
61C/873/FDIS	61C/874/RVD

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. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/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. It was established on the basis of the fifth edition (2010) 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: Safety requirements for motor-compressors.

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

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;
– unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
– 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.

Documents
Document Sharing Hub
Full document details: BS EN IEC 60335-2-34:2023+A12:2025

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may 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 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.

Documents
Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

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.

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 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 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 be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

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 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.

Documents
Document Sharing Hub
Full document details: BS EN IEC 60335-2-34:2023+A12:2025

Operational tests may also be conducted on the **motor-compressor** separately in certain circumstances. The specification for this type testing is provided in Annex AA. However, 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 be conducted on the final application and used as the final determination of acceptability.

〈A11〉 With European Amendment A11, EN 60335-2-34:2013 is superseded.

This European Amendment A11, supplements or modifies the corresponding clauses of the standards below:

— EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021+A16:—[1] (Part 1)

— EN IEC 60335-2-34:2023 (Part 2) 〈A11〉

〈A12〉 This European Amendment A12 supplements or modifies the corresponding clauses of the standards below:

— EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021+A16:2023 (Part 1)

— EN IEC 60335-2-34:2023+A11:2023 (Part 2)

Additional requirements for appliances with power driven parts intended for commercial use are given in Annex ZE.

This European standard does not deal with any specific requirements on noise emitted from these appliances the generated noise is not considered to be a relevant hazard. Thus, the emission sound pressure level L_{pA} is considered to be $L_{pA} \leq 70$ dB(A). 〈A12〉

[1] To be published in 2023. Stage at the time of publication: FprEN 60335-1:2012/A16:2021.

Documents
Document Sharing Hub
Full document details: BS EN IEC 60335-2-34:2023+A12:2025

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 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 **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 equipment for measurement, control, and laboratory use (IEC 61010-2-011);

– professional ice-cream makers (IEC 60335-2-118);

– refrigerating 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, 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.

〚A11〛 This document deals with the reasonably foreseeable hazards presented by appliances that are encountered by all persons. However, in general, it does not take into account:

— **children** playing with the appliance;

— the use of the appliance by **young children** and **very young children**;

— the use of the appliance by **older children** without supervision.

It is recognized that **very vulnerable people** may have needs beyond the level addressed in this document. 〚/A11〛

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;

– in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities.

AVA Documents Document Sharing Hub

Full document details: BS EN IEC 60335-2-34:2023+A12:2025

This standard does not apply to

– ⟨A11⟩ **motor-compressors** designed exclusively for industrial purposes (EN 12693 or EN 60034-1); ⟨A11⟩
– **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[1]

ISO 817:2014, *Refrigerants – Designation and safety classification*
ISO 817:2014/AMD1:2017

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

3 Terms and definitions

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

3.1 Definitions relating to physical characteristics

3.1.101
design pressure
gauge pressure that has been assigned to a **transcritical refrigeration system**

Note 1 to entry: It is specified for the high pressure side of a refrigeration system.

3.1.102
application category
back pressure relative to the evaporation temperature range over which the **motor-compressor** operates

Note 1 to entry: For the purpose of this standard, the following classifications of **application categories** are made relative to the maximum evaporation temperature:

– very low back pressure (VLBP): denotes a maximum evaporation temperature of –25 °C;

[1] There exists a consolidated edition 4.2:2019 that includes Edition 4 and its Amendment 1 and Amendment 2.

Documents Document Sharing Hub
Full document details: BS EN IEC 60335-2-34:2023+A12:2025

– low back pressure (LBP): denotes a maximum evaporation temperature of –15 °C;
– medium back pressure (MBP): denotes a maximum evaporation temperature of 0 °C;
– high back pressure (HBP): denotes a maximum evaporation temperature of +15 °C;
– very high back pressure (VHBP): denotes a maximum evaporation temperature of +30 °C;
– subcritical R-744 back pressure (SC R-744BP): denotes a maximum evaporation temperature of –15 °C;

3.5 Definitions relating to types of appliances

3.5.101
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 seals, and with the motor operating in a refrigerant atmosphere with or without oil

Note 1 to entry: 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**). A terminal box, a terminal box cover, and other electrical components or an electronic control system may be included.

Note 2 to entry: Hereafter, the term **motor-compressor** will be used to designate either a **hermetic motor-compressor** or **semi-hermetic motor-compressor**.

3.5.102
two-stage motor-compressor
motor-compressor comprising two compressors and one motor in a single **housing**

3.6 Definitions relating to parts of an appliance

3.6.101
housing
sealed enclosure for the **motor-compressor**, which contains the compressor mechanism and the motor, and which is subjected to refrigerant pressures

3.6.102
starting relay
electrically operated control device intended for integration or incorporation into a **motor-compressor** and used within the **motor-compressor** circuit to control the starting of single-phase **motor-compressors**

3.7 Definitions relating to safety components

3.7.101
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

Note 1 to entry: This control carries **motor-compressor** current and is sensitive to one or both of the following:
– **motor-compressor** temperature;
– **motor-compressor** current.

Note 2 to entry: The control is capable of being reset (either manually or automatically) when its temperature falls to the reset value.

3.7.102
motor-compressor protection system
thermal motor protector and associated components, if any, or **protective electronic circuit** fully or partly separate or integrated into the **motor-compressor control system** and which is specifically intended to protect the **motor-compressor** against over-heating due to running overload or failure to start

Note 1 to entry: The control carries **motor-compressor** current and is sensitive to one or both of the following:
– **motor-compressor** temperature;

Documents
Document Sharing Hub
Full document details: BS EN IEC 60335-2-34:2023+A12:2025