BS EN 60034-1:2010



BSI Standards Publication

Rotating electrical machines

Part 1: Rating and performance

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National foreword

This British Standard is the UK implementation of EN 60034-1:2010, incorporating corrigendum October 2010. It was derived by CENELEC from IEC 60034-1:2010. It supersedes BS EN 60034-1:2004, which will be withdrawn on 1 October 2013.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by tags (e.g. 〈C〉 〈C〉)

The UK participation in its preparation was entrusted to Technical Committee PEL/2, Rotating electrical machinery.

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

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English version

Rotating electrical machines - Part 1: Rating and performance

(IEC 60034-1:2010, modified)

Machines électriques tournantes - Partie 1: Caractéristiques assignées et caractéristiques de fonctionnement (CEI 60034-1:2010, modifiée)

Drehende elektrische Maschinen - Teil 1: Bemessung und Betriebsverhalten (IEC 60034-1:2010, modifiziert)

This European Standard was approved by CENELEC on 2010-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

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

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Foreword

The text of the International Standard IEC 60034-1:2010, prepared by IEC TC 2, Rotating machinery, together with the common modification prepared by the Technical Committee CENELEC TC 2, Rotating machinery, was submitted to the CENELEC formal vote and was approved by CENELEC as EN 60034-1 on 2010-10-01.

This European Standard supersedes EN 60034-1:2004.

The contents of the corrigendum of October 2010 have been included in this copy.

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

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-10-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-10-01

This draft European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directives 2004/108/EC and 2006/95/EC. See Annex ZZ.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60034-1:2010 was approved by CENELEC as a European Standard with agreed common modifications.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60027-1	-	Letter symbols to be used in electrical technology - Part 1: General	EN 60027-1	-
IEC 60027-4	-	Letter symbols to be used in electrical technology - Part 4: Rotating electrical machines	EN 60027-4	-
IEC 60034-2	Series	Rotating electrical machines - Part 2: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)	EN 60034-2	Series
IEC 60034-3	-	Rotating electrical machines - Part 3: Specific requirements for synchronous generators driven by steam turbines or combustion gas turbines	EN 60034-3	-
IEC 60034-5	-	Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - Classification	EN 60034-5	-
IEC 60034-8	-	Rotating electrical machines - Part 8: Terminal markings and direction of rotation	EN 60034-8	-
IEC 60034-12	-	Rotating electrical machines - Part 12: Starting performance of single-speed three-phase cage induction motors	EN 60034-12	-
IEC 60034-15	-	Rotating electrical machines - Part 15: Impulse voltage withstand levels of form-wound stator coils for rotating a.c. machines	EN 60034-15	-
IEC 60034-17		Rotating electrical machines - Part 17: Cage induction motors when fed from converters - Application guide	-	-
IEC 60034-18	Series	Rotating electrical machines - Part 18: Functional evaluation of insulation systems	EN 60034-18	Series
IEC 60034-30	-	Rotating electrical machines - Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE code)	EN 60034-30	-
IEC 60038	-	IEC standard voltages	-	-
IEC 60050-411	1996	International Electrotechnical Vocabulary (IEV) - Chapter 411: Rotating machinery	-	-

Publication	Year	Title	EN/HD	Year
IEC 60060-1	-	High-voltage test techniques - Part 1: General definitions and test requirements	HD 588.1	-
IEC 60072	Series	Dimensions and output series for rotating electrical machines	-	-
IEC 60085	-	Electrical insulation - Thermal evaluation and designation	EN 60085	-
IEC 60204-1	-	Safety of machinery - Electrical equipment of machines - Part 1: General requirements	EN 60204-1	-
IEC 60204-11	-	Safety of machinery - Electrical equipment of machines - Part 11: Requirements for HV equipment for voltages above 1 000 V a.c. or 1 500 V d.c. and not exceeding 36 kV	EN 60204-11	-
IEC 60335-1	-	Household and similar electrical appliances - Safety - Part 1: General requirements	EN 60335-1	-
IEC 60445	-	Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals and conductor terminations	EN 60445	-
IEC 60664-1	-	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	-
IEC 60971[1)]	-	Semiconductor convertors. Identification code for convertor connections	-	-
IEC 61293	-	Marking of electrical equipment with ratings related to electrical supply - Safety requirements	EN 61293	-
CISPR 11	-	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement	EN 55011	-
CISPR 14	Series	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus	EN 55014	Series
CISPR 16	Series	Specification for radio disturbance and immunity measuring apparatus and methods	EN 55016	Series

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[1)] IEC 60971 was withdrawn and not replaced in 2004.

Annex ZZ
(informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex I of the EC Directives 2004/108/EC and 2006/95/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

Bibliography

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60034-6	NOTE Harmonized as EN 60034-6.
IEC 60034-7	NOTE Harmonized as EN 60034-7.
IEC 60034-9	NOTE Harmonized as EN 60034-9.
IEC 60034-11	NOTE Harmonized as EN 60034-11.
IEC 60034-14	NOTE Harmonized as EN 60034-14.
IEC 60034-29	NOTE Harmonized as EN 60034-29.
IEC 60079 series	NOTE Harmonized in EN 60079 series (partially modified).
IEC 60349 series	NOTE Harmonized in EN 60349 series (partially modified).

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ROTATING ELECTRICAL MACHINES –

Part 1: Rating and performance

1 Scope

This part of IEC 60034 is applicable to all rotating electrical machines except those covered by other IEC standards, for example, IEC 60349 [10][1)].

Machines within the scope of this standard may also be subject to superseding, modifying or additional requirements in other publications, for example, IEC 60079 [8] and IEC 60092 [9].

NOTE If particular clauses of this standard are modified to meet special applications, for example machines subject to radioactivity or machines for aerospace, all other clauses apply insofar as they are compatible.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60027-1, *Letter symbols to be used in electrical technology – Part 1: General*

IEC 60027-4, *Letter symbols to be used in electrical technology – Part 4: Rotating electrical machines*

IEC 60034-2 (all parts), *Rotating electrical machines – Part 2: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)*

IEC 60034-3, *Rotating electrical machines – Part 3: Specific requirements for synchronous generators driven by steam turbines or combustion gas turbines*

IEC 60034-5, *Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification*

IEC 60034-8, *Rotating electrical machines – Part 8: Terminal markings and direction of rotation*

IEC 60034-12, *Rotating electrical machines – Part 12: Starting performance of single-speed three-phase cage induction motors*

IEC 60034-15, *Rotating electrical machines – Part 15: Impulse voltage withstand levels of form-wound stator coils for rotating a.c. machines*

IEC 60034-17, *Rotating electrical machines – Part 17: Cage induction motors when fed from converters – Application guide*

IEC 60034-18 (all parts), *Rotating electrical machines – Part 18: Functional evaluation of insulating systems*

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1) Figures in square brackets refer to the Bibliography.