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Standards

Irish Standard  
I.S. EN 60034-19:2014

# Rotating electrical machines - Part 19: Specific test methods for d.c. machines on conventional and rectifier-fed supplies

**I.S. EN 60034-19:2014**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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EUROPEAN STANDARD

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NORME EUROPÉENNE

EUROPÄISCHE NORM

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**Rotating electrical machines - Part 19: Specific test methods for  
d.c. machines on conventional and rectifier-fed supplies  
(IEC 60034-19:2014)**

Machines électriques tournantes - Partie 19: Méthodes  
spécifiques d'essai pour machines à courant continu à  
alimentation conventionnelle ou redressée  
(CEI 60034-19:2014)

Drehende elektrische Maschinen - Teil 19: Besondere  
Prüfverfahren für Gleichstrommaschinen, betrieben an  
gleichrichtergespeisten Leistungsversorgungen oder  
anderen Gleichstromquellen  
(IEC 60034-19:2014)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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## **Foreword**

The text of document 2/1756/FDIS, future edition 2 of IEC 60034-19, prepared by IEC/TC 2 "Rotating machinery" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60034-19:2014.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-07-30
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## Annex ZA

(normative)

### Normative references to international publications with their corresponding European publications

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NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60034-1	-	Rotating electrical machines - Part 1: Rating and performance	EN 60034-1	-
IEC 60034-2-1	-	Rotating electrical machines - Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)	EN 60034-2-1	-

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**IEC 60034-19**

Edition 2.0 2014-09

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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**Rotating electrical machines –  
Part 19: Specific test methods for d.c. machines on conventional and  
rectifier-fed supplies**

**Machines électriques tournantes –  
Partie 19: Méthodes spécifiques d'essai pour machines à courant continu à  
alimentation conventionnelle ou redressée**



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**IEC 60034-19**

Edition 2.0 2014-09

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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**Rotating electrical machines –  
Part 19: Specific test methods for d.c. machines on conventional and  
rectifier-fed supplies**

**Machines électriques tournantes –  
Partie 19: Méthodes spécifiques d'essai pour machines à courant continu à  
alimentation conventionnelle ou redressée**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### **ROTATING ELECTRICAL MACHINES –**

### **Part 19: Specific test methods for d.c. machines on conventional and rectifier-fed supplies**

#### FOREWORD

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International Standard IEC 60034-19 has been prepared by IEC technical committee 2: Rotating machinery.

This second edition cancels and replaces the first edition published in 1995. It constitutes a technical revision. The main technical changes with regard to the previous edition are as follows:

- a) The description of the procedure for black band testing has been detailed and clarified.
- b) Procedures for measurement of the magnetization curves under no-load and load conditions have been added.

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

FDIS	Report on voting
2/1756/FDIS	2/1764/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

NOTE A table of cross-references of all IEC TC 2 publications can be found on the IEC TC 2 dashboard on the IEC website.

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

# ROTATING ELECTRICAL MACHINES –

## Part 19: Specific test methods for d.c. machines on conventional and rectifier-fed supplies

### 1 Scope

This part of IEC 60034 applies to d.c. machines rated 1 kW and above operating on rectifier-fed power supplies, d.c. buses or other d.c. sources.

Standardized methods are provided for determining characteristic quantities for conventional and rectifier-fed d.c. machines.

Excluded are d.c. machines for specific applications.

These methods supplement the requirements in IEC 60034-1 and IEC 60034-2-1.

NOTE It is not intended that this standard should be interpreted as requiring the carrying out of any or all of the tests described therein on any given machine.

### 2 Normative references

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

IEC 60034-1, *Rotating electrical machines – Part 1: Rating and performance*

IEC 60034-2-1, *Rotating electrical machines – Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)*

### 3 Terms, definitions, symbols and subscripts

#### 3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

##### 3.1.1

##### **current ripple**

peak-to-peak amplitude of the armature current of rectifier-fed d.c. machines

##### 3.1.2

##### **voltage ripple**

peak-to-peak amplitude of the terminal voltage of rectifier-fed d.c. machines

##### 3.1.3

##### **time constant**

time to achieve 63,2 % of steady-state value after applying a d.c. step input, assuming a first order system

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