

Adjustable speed electrical power drive systems - Part 9-1: Ecodesign for power drive systems, motor starters, power electronics and their driven applications - General requirements for setting energy efficiency standards for power driven equipment using the extended product approach (EPA) and semi analytic model (SAM)

EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN 61800-9-1:2017 sisaldab Euroopa standardi EN 61800-9-1:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 61800-9-1:2017 consists of the English text of the European standard EN 61800-9-1:2017.
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English Version

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power electronics and their driven applications - General
requirements for setting energy efficiency standards for power
driven equipment using the extended product approach (EPA)
and semi analytic model (SAM)
(IEC 61800-9-1:2017)**

Entraînements électriques de puissance à vitesse variable -
Partie 9-1: Écoconception des entraînements électriques de
puissance, des démarreurs de moteurs, de l'électronique de
puissance et de leurs applications entraînées - Exigences
générales pour définir les normes d'efficacité énergétique
d'un équipement entraîné via l'approche produit étendu
(EPA) et le modèle semi-analytique (SAM)
(IEC 61800-9-1:2017)

Drehzahlveränderbare elektrische Antriebe -
Teil 9-1: Energieeffizienz für Antriebssysteme, Motorstarter,
Leistungselektronik und deren angetriebene Einrichtungen -
Allgemeine Anforderungen für die Erstellung von Normen
zur Energieeffizienz von Ausrüstungen mit Elektroantrieb
nach dem erweiterten Produktansatz (EPA) und semi-
analytischen Modellen (SAM)
(IEC 61800-9-1:2017)

This European Standard was approved by CENELEC on 2017-04-07. 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.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 22G/348/FDIS, future edition 1 of IEC 61800-9-1, prepared by SC 22G "Adjustable speed electric drive systems incorporating semiconductor power converters", of IEC/TC 22 "Power electronic systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61800-9-1:2017.

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) 2018-01-07
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-04-07

This document supersedes EN 50598-1:2014.

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Endorsement notice

The text of the International Standard IEC 61800-9-1:2017 was approved by CENELEC as a European Standard without any modification.

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

IEC 60034-1	NOTE	Harmonized as EN 60034-1.
IEC 60034-2-2	NOTE	Harmonized as EN 60034-2-2.
IEC 60034-30-1	NOTE	Harmonized as EN 60034-30-1.
IEC 60947-4-1	NOTE	Harmonized as EN 60947-4-1.
IEC 60947-4-2	NOTE	Harmonized as EN 60947-4-2.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

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.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-161	-	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
IEC 60034-2-1	2014	Rotating electrical machines - Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)	EN 60034-2-1	2014
IEC/TS 60034-2-3	-	Rotating electrical machines - Part 2-3: Specific test methods for determining losses and efficiency of converter-fed AC induction motors	-	-
IEC 61800-9-2	2017	Adjustable speed electrical power drive systems - Part 9-2: Ecodesign for power drive systems, motor starters, power electronics and their driven applications - Energy efficiency indicators for power drive systems and motor starters	EN 61800-9-2	2017

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INTRODUCTION

IEC SC 22G includes the standardization task force for dealing with energy efficiency of motor systems. It has close collaboration with several other technical committees (for example, IEC TC 2, IEC SC 121A).

IEC SC 22G maintains responsibility for all relevant aspects in the field of energy efficiency and ecodesign requirements for power electronics, switchgear, control gear and power drive systems and their industrial applications.

The core requirements of energy efficiency standardization are illustrated in Figure 1. The work has been agreed to provide the reasonable target as a best compromise.

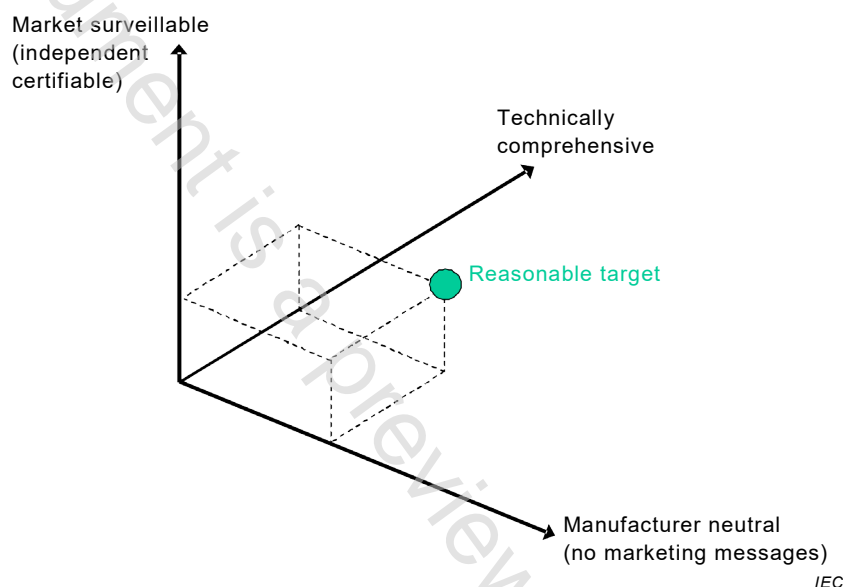


Figure 1 – Illustration of core requirements of energy efficiency standardization

IEC 61800 (all parts) does not deal with mechanical engineering components.

NOTE Geared motors (motors with directly adapted gearboxes) are treated like power drive systems (converter plus motor). See IEC 60034-30-1 for classification of the losses of a geared motor. The efficiency classes of gearboxes as individual components are under consideration.

IEC 61800-9-1 is a subpart of the IEC 61800 series, which has the following structure:

- *Part 1: General requirements – Rating specifications for low voltage adjustable speed d.c. power drive systems*
- *Part 2: General requirements – Rating specifications for low voltage adjustable speed a.c. power drive systems*
- *Part 3: EMC requirements and specific test methods*
- *Part 4: General requirements – Rating specifications for a.c. power drive systems above 1 000 V a.c. and not exceeding 35 kV*
- *Part 5: Safety requirements*
- *Part 6: Guide for determination of types of load duty and corresponding current ratings*
- *Part 7: Generic interface and use of profiles for power drive systems*
- *Part 8: Specification of voltage on the power interface*
- *Part 9: Ecodesign for power drive systems, motor starters, power electronics and their driven applications*

Each part is further subdivided into several subparts, published either as International Standards or as Technical Specifications or Technical Reports, some of which have already been published. Other will be published with the part number followed by a dash and a second number identifying the subdivision (for example, IEC 61800-9-2).

This subpart of IEC 61800-9 is an International Standard for characterizing the energy efficiency of motor systems when supplied by a motor starter or by a variable voltage/frequency converter. The goal of this part of IEC 61800-9 is to establish a clear and simple system for the comparison of the energy performance of motor systems that can help manufacturers to improve their products, to give users the necessary transparency and information and to provide a robust reference base for regulators and minimum energy performance standards.

The IEC 61800-9 series (Ecodesign for power drive systems, motor starters, power electronics and their driven applications) will consist of the following subparts:

- *Part 9-1: General requirements for setting energy efficiency standards for power driven equipment using the extended product approach (EPA) and semi analytic model (SAM)*
- *Part 9-2: Energy efficiency indicators for power drive systems and motor starters*