

INTERNATIONAL STANDARD

REDLINE VERSION

**Fixed capacitors for use in electronic equipment -
Part 14-1: Blank detail specification - Fixed capacitors for electromagnetic
interference suppression and connection to the supply mains - Assessment
level DZ**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Fixed capacitors for use in electronic equipment -
Part 14-1: Blank detail specification - Fixed capacitors for
electromagnetic interference suppression and connection
to the supply mains - Assessment level DZ**

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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60384-14-1:2016. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60384-14-1 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2016. This edition constitutes a technical revision.

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

- a) the tables for dimensions have been replaced with a guidance text in the document;
- b) the possibility to give the requirements for the service in DC applications and in high humidity conditions have been added;
- c) the changes in this document in comparison with the previous edition are given in Annex B.

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

Draft	Report on voting
40/3237/FDIS	40/3250/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/publications.

A list of all parts in the IEC 60384 series, published under the general title *Fixed capacitors for use in electronic equipment*, can be found on the IEC website.

This International Standard is to be used in conjunction with IEC 60384-1 and IEC 60384-14:2023.

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 in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

0 Blank detail specification

0.1 General

This blank detail specification forms the basis for a uniform procedure for a common international safety mark. It implements the approval schedule for safety tests in IEC 60384-14, ~~requires~~ specifies a declaration of design for parameters relevant to safety and indicates conformance tests to be conducted on every lot prior to its release and requalification tests depending on changes to the declared design.

This specification offers the assessment level DZ (zero defects).

~~The use of IEC 60384-14-1, may be more appropriate for components manufactured in mass production, whereas the employment of IEC 60384-14-2 (safety tests only) may be necessary in those cases where approval and requalification tests contribute considerably to the costs of the product.~~

A blank detail specification is a supplementary document to the sectional specification and contains requirements for style, layout and minimum content of detail specifications. Detail specifications not complying with these requirements ~~may are not be~~ considered as being in accordance with IEC specifications, nor ~~shall~~ should they so be described.

In the preparation of detail specifications ~~the content of 1.4 of the sectional specification shall be taken into account~~, refer to IEC 603984-14:2023, Clause 7.

0.2 Identification of the detail specification

The first page of the detail specification should have the layout recommended on the next page of this blank detail specification. The numbers between square brackets in the layout correspond to the following information in [1] to [4] which ~~shall~~ should be inserted at the position indicated:

- [1] The "International Electrotechnical Commission" or the National Standards Organization under whose authority the detail specification is drafted.
- [2] The IEC or National Standards number of the detail specification, date of issue and any further information required by the national system.
- [3] The number and issue number of the IEC, or national, generic, or sectional specification, as relevant.
- [4] If different from the IEC number, the national number of the detail specification, date of issue and any further information required by the national system, together with any amendment numbers.

0.3 Identification of the capacitor

The numbers between square brackets in the layout correspond to the following information in [5] to [9] which should be inserted at the position indicated.

- [5] A short description of the type of capacitor or range of capacitors. The text should be suitable for an entry in the IECQ register of approvals.
- [6] Information on typical construction (when applicable). The text should be suitable for an entry in the IECQ register of approvals.
- [7] Outline drawing with main dimensions which are of importance for ~~and/or~~ either interchangeability ~~and/or~~ reference to the appropriate national or international documents for outlines. Alternatively, the drawing ~~may can~~ be given in an annex to the detail specification, but [7] should always contain an illustration of the general outer appearance of the component.

- [8] The level(s) of quality assessment covered by the detail specification, as appropriate.
- [9] Reference data giving information on the most important properties of the component which allow comparison between the various component types intended for the same or similar applications.

	[1]	IEC 60384-14-1-XXX appropriate national or international detail specification number	[2]
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH: IEC 60384-1 IEC 60384-14	[3]	IEC 60384-14-1	[4]
Outline drawing: [see Table 1] [first angle projection] [Other shapes are permitted within the dimensions given]	[7]	FIXED CAPACITORS FOR ELECTROMAGNETIC INTERFERENCE SUPPRESSION AND CONNECTION TO THE SUPPLY MAINS (ASSESSMENT LEVEL DZ)	[5]
		TYPICAL CONSTRUCTION (Examples)	[6]
		Class/subclass	[8]
For references [1] to [4], see 0.2. For references [5] to [8], see 0.3.			

Information on the availability of components qualified to this detail specification is given in the Qualified products list.	[9]
For reference [9], see 0.3.	

1 Scope

This part of IEC 60384-14 is applicable to the drafting of detail specifications for fixed capacitors and resistor-capacitor combinations for which both safety and performance tests based on assessment level DZ, are required for use in electronic equipment.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60384-1:2016, Fixed capacitors for use in electronic equipment – Part 1: Generic specification~~

IEC 60384-14:20132023, Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains

~~IEC 61193-2:2007, — Quality assessment systems — Part 2: Selection and use of sampling plans for inspection of electronic components and packages~~

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fixed capacitors for use in electronic equipment -
Part 14-1: Blank detail specification - Fixed capacitors for electromagnetic
interference suppression and connection to the supply mains - Assessment
level DZ**

**Condensateurs fixes utilisés dans les équipements électroniques -
Partie 14-1: Spécification particulière-cadre - Condensateurs fixes
d'antiparasitaire et raccordement à l'alimentation - Niveau d'assurance DZ**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

Fixed capacitors for use in electronic equipment - Part 14-1: Blank detail specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains - Assessment level DZ

FOREWORD

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INTRODUCTION

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IEC 60384-14:2023, *Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

Condensateurs fixes utilisés dans les équipements électroniques - Partie 14-1: Spécification particulière-cadre - Condensateurs fixes d'antiparasitage et raccordement à l'alimentation - Niveau d'assurance DZ

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.
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- 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.
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- 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.
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L'IEC 60384-14-1 a été établie par le comité d'études 40 de l'IEC: Condensateurs et résistances pour équipements électroniques. Il s'agit d'une Norme internationale.

Cette quatrième édition annule et remplace la troisième édition parue en 2016 et constitue une révision technique.

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

- a) les tableaux des dimensions ont été remplacés par des recommandations dans le document;
- b) la possibilité de donner les exigences relatives à l'utilisation dans les applications en courant continu et dans des conditions de forte humidité a été ajoutée;
- c) les modifications apportées au présent document par rapport à l'édition précédente sont indiquées en Annexe B.

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

Projet	Rapport de vote
40/3237/FDIS	40/3250/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.

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. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/publications.

Une liste de toutes les parties de la série IEC 60384, publiées sous le titre général *Condensateurs fixes utilisés dans les équipements électroniques*, se trouve sur le site web de l'IEC.

La présente Norme internationale doit être utilisée conjointement avec l'IEC 60384-1 et l'IEC 60384-14:2023.

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 dans les données relatives au document recherché. À cette date, le document sera

- reconduit,
- supprimé, ou
- révisé.

INTRODUCTION

0 Spécification particulière-cadre

0.1 Généralités

La présente spécification particulière-cadre constitue la base d'une procédure uniforme de marquage de sécurité international commun. Elle met en œuvre le programme d'homologation pour les essais de sécurité de l'IEC 60384-14, spécifie une déclaration de conception pour les paramètres relatifs à la sécurité et indique les essais de conformité à réaliser sur tous les lots avant leur livraison et les essais de requalification en fonction des modifications apportées à la conception déclarée.

La présente spécification offre le niveau d'assurance DZ (zéro défaut).

Une spécification particulière-cadre est un document annexe à la spécification intermédiaire qui contient des exigences relatives au modèle, à la disposition et au contenu minimal des spécifications particulières. Les spécifications particulières qui ne satisfont pas à ces exigences ne sont pas considérées comme conformes aux spécifications de l'IEC, et il convient de ne pas les décrire comme telles.

Lors de la préparation des spécifications particulières, se reporter à l'IEC 60384-14:2023, Article 7.

0.2 Identification de la spécification particulière

Il convient que la première page de la spécification particulière ait la disposition recommandée à la page suivante de la présente spécification particulière-cadre. Les numéros entre crochets dans la présentation correspondent aux informations suivantes de [1] à [4] qu'il convient d'insérer à l'emplacement indiqué:

- [1] la Commission Électrotechnique Internationale ou l'organisme national de normalisation sous l'autorité duquel la spécification particulière est rédigée;
- [2] le numéro de la spécification particulière des normes nationales ou des normes IEC, la date d'édition et toute autre information exigée par le système national;
- [3] le numéro et l'édition de la norme IEC, de la spécification nationale, générique ou intermédiaire, selon le cas;
- [4] s'ils sont différents du numéro IEC, le numéro national de la spécification particulière, la date d'édition et toute autre information exigée par le système national, ainsi que tous les numéros d'amendement.

0.3 Identification du condensateur

Les numéros entre crochets dans la présentation correspondent aux informations suivantes de [5] à [9] qu'il convient d'insérer à l'emplacement indiqué:

- [5] une courte description du type de condensateur ou de la plage de condensateurs. Il convient que le texte soit adapté pour être inséré dans le registre des agréments IECQ;
- [6] des informations sur la construction typique (le cas échéant). Il convient que le texte soit adapté pour être inséré dans le registre des agréments IECQ;
- [7] un dessin d'encombrement avec les principales dimensions, importantes pour l'interchangeabilité ou une référence correspondant aux documents nationaux ou internationaux appropriés relatifs à l'encombrement. En variante, le schéma peut faire partie d'une annexe à la spécification particulière, mais il convient que l'indication [7] contienne toujours une représentation de l'aspect général extérieur du composant;
- [8] le ou les niveaux d'assurance de la qualité couverts par la spécification particulière, selon le cas;

[9] des données de référence donnant des informations sur les propriétés les plus importantes du composant, afin de pouvoir comparer les différents types de composants destinés à des applications identiques ou similaires.

[1]	numéro de la spécification particulière nationale ou internationale appropriée [2]
COMPOSANTS ÉLECTRONIQUES SOUS ASSURANCE DE LA QUALITÉ SELON: IEC 60384-1 [3] IEC 60384-14	IEC 60384-14-1 [4]
Dessin d'encombrement: [voir le Tableau 1] [7] [Projection de premier dièdre] [D'autres formes sont admises dans les dimensions données]	CONDENSATEURS FIXES D'ANTIPARASITAGE ET RACCORDEMENT À L'ALIMENTATION (NIVEAU D'ASSURANCE DZ) [5]
	CONSTRUCTION TYPIQUE (Exemples) [6]
	Classe/sous-classe [8]
Les informations sur la disponibilité des composants homologués selon la présente spécification particulière sont présentées dans la liste des produits homologués. [9]	

1 Domaine d'application

La présente partie de l'IEC 60384-14 s'applique à la rédaction des spécifications particulières des condensateurs fixes et des combinaisons résistance-condensateur pour lesquels des essais de sécurité et de performance fondés sur le niveau d'assurance DZ sont exigés en vue de leur utilisation dans les équipements électroniques.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60384-14:2023, *Condensateurs fixes utilisés dans les équipements électroniques - Partie 14: Spécification intermédiaire - Condensateurs fixes pour la suppression des interférences électromagnétiques et la connexion au réseau d'alimentation*