

INTERNATIONAL STANDARD

IEC
60938-2-2

QC 280102

First edition
1999-10

Fixed inductors for electromagnetic interference suppression –

Part 2-2:

Blank detail specification –

Inductors for which safety tests are required (only)

Inductances fixes d'antiparasitage –

Partie 2-2:

Spécification particulière cadre –

Inductances nécessitant des tests de sécurité (uniquement)



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For general terminology, readers are referred to IEC 60050: *International Electrotechnical Vocabulary* (IEV).

For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams*.

* See web site address on title page.

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE

J

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED INDUCTORS FOR ELECTROMAGNETIC INTERFERENCE SUPPRESSION –

Part 2-2: Blank detail specification – Inductors for which safety tests are required (only)

FOREWORD

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International Standard IEC 60938-2-2 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

FDIS	Report on voting
40/1113/FDIS	40/1139/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 3.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

Annex A forms an integral part of this standard.

The committee has decided that this publication remains valid until 2005.

At this date, in accordance with the committee's decision, the publication will be

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- withdrawn;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

A bilingual version of this publication may be issued at a later date.

FIXED INDUCTORS FOR ELECTROMAGNETIC INTERFERENCE SUPPRESSION –

Part 2-2: Blank detail specification – Inductors for which safety tests are required (only)

INTRODUCTION

Blank detail specification

This blank detail specification forms the basis for a uniform procedure for a common mark. It implements the approval schedule for safety tests only in IEC 60938-2, requires a declaration of design for parameters relevant to safety tests and prescribes conformance tests to be conducted on every lot prior to its release and re-qualification tests depending on changes of the design.

In comparison with IEC 60938-2-1 which provides safety tests and performance tests, this specification is restricted to safety tests only.

The use of IEC 60938-2-1 may be more appropriate for components manufactured in mass production, whereas this specification may be necessary in those cases where approval and re-qualification 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 and layout and minimum content of detail specifications. In the preparation of detail specifications the content of 1.4 of the sectional specification shall be taken into account.

The numbers between square brackets on the first page of the detail specification correspond to the following information which shall be inserted in the position indicated.

Identification of the detail specification and of the inductor

The first page of the detail specification should have the layout recommended on the next page of this blank detail specification.

- [0] Manufacturer's name.
- [0A] Manufacturer's style designation.
- [1] The "International Electrotechnical Commission" or the National Standards Organisation 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 specification.
- [4] The IEC number of the blank detail specification.

Identification of the inductor

- [5] A short description of the inductor or range of inductors.
- [6] Information on typical construction (when applicable).

- [7] Outline drawing with main dimensions which are of importance for interchangeability and/or reference to the national or international documents for outlines. Alternatively, this drawing may be given in an annex to the detail specification, but should always contain an illustration of the general outer appearance of the inductor.
- [8] Reference data on the most important properties, to allow comparison between the various inductor types intended for the same, or for similar applications.

[1]	IEC 60938-2-1XX QC XXXXXXXXXXXXX	[2]
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH:	IEC 60938-2-2 QC XXXXXX	[4]
[3]	FIXED INDUCTORS FOR ELECTROMAGNETIC INTERFERENCE SUPPRESSION FOR WHICH SAFETY TESTS ARE REQUIRED	[5]
Outline drawing: (see table 1) (... angle projection)		
[7]		[6]
(Other shapes are permitted within the dimensions given)	Safety tests only	[8]
NOTES [1] to [9] see pages 3 and 4.		

Information on the availability of components qualified
to this detail specification is given in the Register
of Approvals.

1 General data

1.1 Recommended method(s) of mounting (to be inserted)

(See 1.4.3 of IEC 60938-2.)

1.2 Dimensions

Table 1 – Dimensions related to case size

Case size reference or type	Dimensions mm						
	L_1	W	H	L_2	L_3	L_4	

NOTE 1 – When there is no case size reference, the dimensions should be given per type designation.
NOTE 2 – The dimensions should be given as maximum dimensions or as nominal dimensions with a tolerance.

1.3 Ratings and characteristics

Rated inductance (L_R) (see table 2)

Tolerance on rated inductance

Rated current (I) range (see table 2)

DC resistance (R) (see table 2)

Rated voltage

Rated temperature

Climatic category

Category of passive flammability (if applicable)

Table 2 – Values of inductance, rated current and d.c. resistance related to type designation

Ordering code, type designation	L_R per line mH	I_R A	R_{max} per line Ω

1.4 Related documents

Generic specification: IEC 60938-1:1999, *Fixed inductors for electromagnetic interference suppression – Part 1: Generic specification*

Sectional specification: IEC 60938-2:1999, *Fixed inductors for electromagnetic interference suppression – Part 2: Sectional specification*

1.5 Marking

The marking of the inductor shall be in accordance with the requirements of 1.6 of IEC 60938-2.

The details of the marking of the component and package shall be given in full in the detail specification.

1.6 Ordering information

Orders for inductors covered by this specification shall contain, in clear or in coded form, the following minimum information:

- a) type designation;
- b) rated inductance;
- c) tolerance on rated inductance;
- d) rated voltage;
- e) rated current;
- f) number and issue reference of the detail specification and style reference.

1.7 Additional information (not for inspection purposes)

1.8 Additional or increased severities or requirements to those specified in the generic or sectional specification

NOTE – Additions or increased requirements should be specified only when essential.

Table 3 – Other characteristics

<p>This table is to be used for defining characteristics which are additional to or more severe than those given in the sectional specification.</p>
--

2 Inspection requirements

2.1 Procedures

For qualification approval, the procedures shall be in accordance with 3.4 of IEC 60938-2.

2.2 Test schedules

2.2.1 Initial approval

See table 1 and annex A of the sectional specification.

2.2.2 Conformance tests

See table 4 of this specification in association with annex A of this specification.

2.2.2.1 Conformance tests (lot-by-lot)

Table 4 – Conformance tests

Subclause number and test (see note 1)	D or ND (see note 3)	Conditions of test (see note 1)	Sample size	Requirements (see note 1)
4.4 Inductance 4.1 Visual examination 4.2 Voltage proof	ND		100 % (see note 2)	Within specified tolerance Legible marking and as specified in 1.5 of this specification No permanent breakdown or flashover
<p>NOTE 1 – Clause numbers of test and performance requirements refer to the sectional specification, IEC 60938-2 and clause 1 of this specification.</p> <p>NOTE 2 – May be carried out as end-of-line testing.</p> <p>NOTE 3 – D = destructive ND = non destructive</p>				

2.2.2.2 Re-qualification

Re-qualification tests according to 2.2.1 may be required by the certification body when a change of the declared design as given in annex A is intended.

The certification body shall be informed about the intended change(s) and shall decide whether re-qualification tests have to be performed.

As a maximum, a complete re-qualification according to 2.2.1 may be necessary.

(See also introduction.)

Annex A (normative)

Declaration of design (confidential to the manufacturer and the certification body)

The purpose of this description is to register essential data and the basic design of the inductors for which approval is sought. The completed form shall be submitted to the relevant certification body prior to any approval testings; its circulation to the other parties is left to the decision of the manufacturer.

Changes of the declared design are permitted only after notifying the certification body in writing.

In this case the certification body will decide on necessary steps to be taken. As a maximum, a complete re-qualification may be required.

Registration number: (to be allocated by the certification body)

- 1 Applicant:
- 2 Manufacturer:
- 3 Manufacturing site:
- 4 Type designation:
- 5 Circuit diagram:
- 6 Identification of materials
 - 6.1 Encapsulation (if applicable)
 - 6.2 Insulation sleeve (if applicable)
 - 6.3 Core
 - 6.4 Wire
 - 6.5 Others
- 7 Constructional details:

Location

Date

Signature



Standards Survey

The IEC would like to offer you the best quality standards possible. To make sure that we continue to meet your needs, your feedback is essential. Would you please take a minute to answer the questions overleaf and fax them to us at +41 22 919 03 00 or mail them to the address below. Thank you!

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1211 Genève 20
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Fax to: **IEC/CSC** at +41 22 919 03 00

Thank you for your contribution to the standards-making process.

A Prioritaire

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Q1 Please report on **ONE STANDARD** and **ONE STANDARD ONLY**. Enter the exact number of the standard: (e.g. 60601-1-1)

.....

Q2 Please tell us in what capacity(ies) you bought the standard (tick all that apply). I am the/a:

- purchasing agent ☐
 librarian ☐
 researcher ☐
 design engineer ☐
 safety engineer ☐
 testing engineer ☐
 marketing specialist ☐
 other.....

Q3 I work for/in/as a:
(tick all that apply)

- manufacturing ☐
 consultant ☐
 government ☐
 test/certification facility ☐
 public utility ☐
 education ☐
 military ☐
 other.....

Q4 This standard will be used for:
(tick all that apply)

- general reference ☐
 product research ☐
 product design/development ☐
 specifications ☐
 tenders ☐
 quality assessment ☐
 certification ☐
 technical documentation ☐
 thesis ☐
 manufacturing ☐
 other.....

Q5 This standard meets my needs:
(tick one)

- not at all ☐
 nearly ☐
 fairly well ☐
 exactly ☐

Q6 If you ticked NOT AT ALL in Question 5 the reason is: (tick all that apply)

- standard is out of date ☐
 standard is incomplete ☐
 standard is too academic ☐
 standard is too superficial ☐
 title is misleading ☐
 I made the wrong choice ☐
 other

Q7 Please assess the standard in the following categories, using the numbers:

- (1) unacceptable,
 (2) below average,
 (3) average,
 (4) above average,
 (5) exceptional,
 (6) not applicable

- timeliness.....
 quality of writing.....
 technical contents.....
 logic of arrangement of contents
 tables, charts, graphs, figures.....
 other

Q8 I read/use the: (tick one)

- French text only ☐
 English text only ☐
 both English and French texts ☐

Q9 Please share any comment on any aspect of the IEC that you would like us to know:

.....





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La CEI ambitionne de vous offrir les meilleures normes possibles. Pour nous assurer que nous continuons à répondre à votre attente, nous avons besoin de quelques renseignements de votre part. Nous vous demandons simplement de consacrer un instant pour répondre au questionnaire ci-après et de nous le retourner par fax au +41 22 919 03 00 ou par courrier à l'adresse ci-dessous. Merci !

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Commission Electrotechnique Internationale

3, rue de Varembé

1211 Genève 20

Suisse

ou

Télécopie: **CEI/CSC** +41 22 919 03 00

Nous vous remercions de la contribution que vous voudrez bien apporter ainsi à la Normalisation Internationale.

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Commission Electrotechnique Internationale

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1211 GENÈVE 20

Suisse



Q1 Veuillez ne mentionner qu'**UNE SEULE NORME** et indiquer son numéro exact:
(ex. 60601-1-1)
.....

Q2 En tant qu'acheteur de cette norme, quelle est votre fonction?
(cochez tout ce qui convient)
Je suis le/un:

- agent d'un service d'achat ☐
- bibliothécaire ☐
- chercheur ☐
- ingénieur concepteur ☐
- ingénieur sécurité ☐
- ingénieur d'essais ☐
- spécialiste en marketing ☐
- autre(s).....

Q3 Je travaille:
(cochez tout ce qui convient)

- dans l'industrie ☐
- comme consultant ☐
- pour un gouvernement ☐
- pour un organisme d'essais/ certification ☐
- dans un service public ☐
- dans l'enseignement ☐
- comme militaire ☐
- autre(s).....

Q4 Cette norme sera utilisée pour/comme
(cochez tout ce qui convient)

- ouvrage de référence ☐
- une recherche de produit ☐
- une étude/développement de produit ☐
- des spécifications ☐
- des soumissions ☐
- une évaluation de la qualité ☐
- une certification ☐
- une documentation technique ☐
- une thèse ☐
- la fabrication ☐
- autre(s).....

Q5 Cette norme répond-elle à vos besoins:
(une seule réponse)

- pas du tout ☐
- à peu près ☐
- assez bien ☐
- parfaitement ☐

Q6 Si vous avez répondu PAS DU TOUT à Q5, c'est pour la/les raison(s) suivantes:
(cochez tout ce qui convient)

- la norme a besoin d'être révisée ☐
- la norme est incomplète ☐
- la norme est trop théorique ☐
- la norme est trop superficielle ☐
- le titre est équivoque ☐
- je n'ai pas fait le bon choix ☐
- autre(s)

Q7 Veuillez évaluer chacun des critères ci-dessous en utilisant les chiffres
(1) inacceptable,
(2) au-dessous de la moyenne,
(3) moyen,
(4) au-dessus de la moyenne,
(5) exceptionnel,
(6) sans objet

- publication en temps opportun
- qualité de la rédaction.....
- contenu technique
- disposition logique du contenu
- tableaux, diagrammes, graphiques, figures
- autre(s)

Q8 Je lis/utilise: (une seule réponse)

- uniquement le texte français ☐
- uniquement le texte anglais ☐
- les textes anglais et français ☐

Q9 Veuillez nous faire part de vos observations éventuelles sur la CEI:

-
-
-
-
-



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