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**Pasivni filtri za dušenje elektromagnetnega motenja - 2. del: Področna specifikacija - Pasivni filtri, za katere varnostni preskusi ustrezajo - Preskusne metode in splošne zahteve - Dopolnilo A1**

Amendment 1 - Passive filter units for electromagnetic interference suppression - Part 2: Sectional specification - Passive filter units for which safety tests are appropriate - Test methods and general requirements

(standards.iteh.ai)

[SIST EN 60939-2:2005/oprA1:2023](https://standards.iteh.ai/catalog/standards/sist/ededca27-2b5f-4d8b-ab37-5b7d8db99296/sist-en-60939-2-2005-opra1-2023)  
<https://standards.iteh.ai/catalog/standards/sist/ededca27-2b5f-4d8b-ab37-5b7d8db99296/sist-en-60939-2-2005-opra1-2023>

**Ta slovenski standard je istoveten z: EN 60939-2:2005/prA1:2023**

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**ICS:**

31.160

Električni filtri

Electric filters

**SIST EN 60939-2:2005/oprA1:2023**

**en**





40/3014/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:

IEC 60939-2/AMD1 ED2

DATE OF CIRCULATION:

2023-01-06

CLOSING DATE FOR VOTING:

2023-03-31

SUPERSEDES DOCUMENTS:

40/2967/CD, 40/3011/CC

IEC TC 40 : CAPACITORS AND RESISTORS FOR ELECTRONIC EQUIPMENT

SECRETARIAT:

Netherlands

SECRETARY:

Mr Ronald Drenthen

OF INTEREST TO THE FOLLOWING COMMITTEES:

PROPOSED HORIZONTAL STANDARD:



Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC☐ ENVIRONMENT☐ QUALITY ASSURANCE☐ SAFETY☒ SUBMITTED FOR CENELEC PARALLEL VOTING☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING**Attention IEC-CENELEC parallel voting**

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

**Amendment 1 – Passive filter units for electromagnetic interference suppression – Part 2: Sectional specification – Passive filter units for which safety tests are appropriate – Test methods and general requirements**

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

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## FOREWORD

This amendment has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

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

FDIS	Report of voting
40/XXXX/FDIS	40/XXXX/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

The National Committees are requested to note that for this publication the stability date is 2026.

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

SIST EN 60939-2:2005/oprA1:2023

<https://standards.iteh.ai/catalog/standards/sist/ededca27-2b5f-4d8b-ab37-5b7d8db99296/sist-en-60939-2-2005-oprA1-2023>

**Page 6 and page 7:**

In clause 1.2 Normative references, change the following references to dated references:

IEC 60335-1:2020, *Safety of household and similar electrical appliances – Part 1: General requirements*

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*

IEC 60939-1:2010, *Passive filter units for electromagnetic interference suppression – Part 1: Generic specification*

**Move following references to Bibliography because they are not, after publishing the Amendment anymore referred normatively:**

IEC 60384-9, *Fixed capacitors for use in electronic equipment – Part 9: Sectional specification: Fixed capacitors of ceramic dielectric, Class 2*

IEC 60938-1:2021, *Fixed inductors for electromagnetic interference suppression – Part 1: Generic specification*

**The dating shall be added to each dated reference in the document. See table at the end of this amendment.**

**Page 9:**

Clause 1.4.3 and Table 2 shall be modified as below to reflect the content of IEC 60384-14:2023:

**1.4.3****class Y capacitor**

capacitor or RC-unit of a type suitable for use in situations where failure of the capacitor could lead to danger of electric shock.

Class Y capacitors are further divided into three subclasses, Y1, Y2 and Y4, as shown in Table 2.

**Table 1 – Classification of Class Y capacitors**

Subclass	Type of insulation bridged	Range of rated voltages	Peak impulse voltage $U_P$ applied before endurance test	
Y1	Double insulation or reinforced insulation	$\leq 500$ V	8,0 kV	
Y2	Basic insulation or supplementary insulation	$\geq 150$ V $\leq 500$ V	$C_N \leq 1,0 \mu\text{F}$	$C_N > 1,0 \mu\text{F}$
			5 kV	$U_P = \frac{5}{\sqrt{\frac{C_N}{10^{-6}}}} \text{ kV}$
Y4	Basic insulation or supplementary insulation	$< 150$ V	2,5 kV	
Y2 capacitors may be substituted by Y1 capacitors of the same or higher $U_R$				
NOTE 1 For definitions of basic, supplementary, double, and reinforced insulation, see IEC 61140.				
NOTE 2 The factor used for the reduction of $U_P$ for capacitance values above $1,0 \mu\text{F}$ maintains $0,5 \times C_N U_P^2$ constant for these capacitance values; $C_N$ is in F.				
NOTE 3 Overvoltage categories in association with rated impulse voltage and rated mains voltage are found in IEC 60664-1.				

One Y1-capacitor may bridge double insulation or reinforced insulation.

The enclosure of a Y1-capacitor shall not contain other components.

Assemblies, like Delta by-pass or T-connected by-pass capacitors, may be constructed from Y-capacitors and X-capacitors provided these capacitors fulfil the requirements for the relevant X and Y subclasses.

One Y-capacitor may bridge basic insulation. One Y-capacitor may bridge supplementary insulation. If combined basic and supplementary insulations are bridged by two or more Y2- or Y4-capacitors in series, they shall have the same class and sub-class, the same rated voltage, and the same nominal capacitance value.

#### Page 19:

In clause 4.1 instead of the reference to IEC 60938-1 the full contents of IEC 60938-1:2021, Annex B shall be added. Change Clause 4.1 into:

#### 4.1 Earth inductors incorporated in filters

Earth inductors incorporated in filters shall meet the requirements of the relevant specification(s).

The cross section of the copper winding shall be not less than the value specified in Table 13, see also IEC 60938-1:2021, Annex B.

**Table 13 – Minimum copper cross-sectional area of earth inductor's winding**

Rated current in A	≤10	≤16	≤25	≤35	≤50	≤63	≤80	≤100	≤125	≤160
Minimum wire cross section in mm <sup>2</sup>	1,0	1,5	2,5	4,0	6,0	10,0	16,0	25,0	35,0	50,0

The cross-sectional area of the leads to the earth inductor shall be at least of the same copper cross section as the winding.

Earth inductors shall be so designed that the voltage between input and output termination does not exceed 4 V when four times the rated current is applied.

Table, where the adding of dating to the dated references is listed:

Document	Clause / Table	Paragraph	Sentence etc.
<b>60335-1:2020</b>	4.3.2	2 <sup>nd</sup> (p.19)	1 <sup>st</sup> sentence
		3 <sup>rd</sup> (p:19)	1 <sup>st</sup> sentence
<b>60384-14:2023</b>	1.4.3		After 2 <sup>nd</sup> sentence in parenthesis
	3.5 / Table 7		Footnote 11
	4.2		1 <sup>st</sup> sentence
	4.22 / Table 12		2 <sup>nd</sup> column, 2 <sup>nd</sup> row
<b>60939-1:2010</b>	1.1		1 <sup>st</sup> sentence
	1.4		1 <sup>st</sup> sentence
	1.5.1		1 <sup>st</sup> sentence
	3.1		1 <sup>st</sup> sentence
	3.2		1 <sup>st</sup> sentence
	3.3		1 <sup>st</sup> sentence
	3.4.1	1 <sup>st</sup>	2 <sup>nd</sup> sentence
	3.4.2	2 <sup>nd</sup>	1 <sup>st</sup> sentence
	3.5.4	1 <sup>st</sup>	1 <sup>st</sup> sentence
	4		1 <sup>st</sup> sentence
	4.3.1		1 <sup>st</sup> sentence
	4.4		1 <sup>st</sup> sentence
	4.4.2	1 <sup>st</sup>	1 <sup>st</sup> sentence
		2 <sup>nd</sup>	2 <sup>nd</sup> sentence
	4.5	1 <sup>st</sup>	
		2 <sup>nd</sup>	2 <sup>nd</sup> sentence
	4.7		1 <sup>st</sup> sentence
	4.8		1 <sup>st</sup> sentence
	4.9		1 <sup>st</sup> sentence
	4.10		2 <sup>nd</sup> sentence
	4.11		2 <sup>nd</sup> sentence
	4.11.2		1 <sup>st</sup> sentence
	4.12		1 <sup>st</sup> sentence
	4.13		1 <sup>st</sup> sentence
	4.14		2 <sup>nd</sup> sentence