IEC 60096-0-1

Edition 3.1 2017-01

FINAL VERSION

VERSION FINALE

Radio frequency cables –
Part 0-1: Guidelines to the design of detail specifications – Coaxial cables

Câbles pour fréquences radioélectriques –
Partie 0-1: Lignes directrices pour la conception des spécifications particulières – Câbles coaxiaux

IEC 60096-0-1:2012-10+AMD1:2017-01 CSV(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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RADIO FREQUENCY CABLES –

Part 0-1: Guidelines to the design of detail specifications – Coaxial cables

FOREWORD

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This Consolidated version of IEC 60096-0-1 bears the edition number 3.1. It consists of the third edition (2012-10) [documents 46A/1043/FDIS and 46A/1064/RVD] and its amendment 1 (2017-01) [documents 46A/1317/FDIS and 46A/1321/RVD]. The technical content is identical to the base edition and its amendment.

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

International standard IEC 60096-0-1 has been prepared by subcommittee 46A: Coaxial cables, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

This third edition constitutes a technical revision.

The significant changes with respect to the previous edition are as follows:

– tables of material constants and factors and have been updated, different equations have been updated and corrected;
– a subclause dealing with the calculation of “Current carrying capacity of coaxial cables” has been added as Subclause 7.7.

A list of all the parts in the IEC 60096 series, published under the general title *Radio frequency cables*, can be found on the IEC website.

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

The committee has decided that the contents of the base publication and its amendment 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- withdrawn,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.

RADIO FREQUENCY CABLES –

Part 0-1: Guidelines to the design of detail specifications – Coaxial cables

1 Scope

This part of IEC 60096 provides guidance for the design of radio frequency coaxial cables with braid, metallic tapes or tubular outer conductors.

2 Normative references

Void.

3 Symbols and numbering

3.1 Register of symbols used

Symbol	Designation	Unit
α	Total attenuation per unit length, 20 °C	dB/100 m
α_T	Total attenuation per unit length, $T \neq 20$ °C	dB/100 m
α_x	Attenuation due to element *x*, 20 °C	dB/100 m
β_x	Braid angle of element *x*	° (degree)
γ_x	Density of the material of element *x*	g/cm^3
δ_x	Loss angle of the material of element *x*	rad
ε_x	Relative dielectric permittivity of the material of element *x*	–
χ_x	Conductivity of the material of element *x*, 20 °C	m/Ωmm^2
σ_x	Thermal resistivity of the material of element *x*	K·m/W
B_x	Braid coverage concerning element *x*	–
c_o	Velocity of propagation in free space	m/s
C	Dielectric diameter	mm
C_x	Capacitance of element *x*, per unit length	pF/m
d_x	Diameter of individual wires of element *x*	mm
D_x	Outer diameter of element *x*	mm
D_{xe}	Electrical effective diameter of element *x*	mm
D_{xm}	Mean diameter of element *x*	mm
D	Sheath diameter	mm
D_s	Outer conductor diameter	mm
d	Center conductor diameter	mm
E_2	Maximum permissible voltage gradient of dielectric (peak value)	kV/mm
ε	Surface emissivity (sheathed=0,95, bare=0,35)	
f	Frequency	MHz
h_x	Coating thickness concerning element *x*	mm
I	Current carrying capacity (Amperes)	
k_x , k_{xy}	Calculation factors according to Tables 1 and 2	–
L_x	Braid lay length concerning element *x*	mm