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Edition 2.0 2014-06

INTERNATIONAL STANDARD

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Coaxial communication cables –
Part 1-111: Electrical test methods – Stability of phase test methods

IEC 61196-1-111:2014-06(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COAXIAL COMMUNICATION CABLES –

Part 1-111: Electrical test methods – Stability of phase test methods

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International Standard IEC 61196-1-111 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.

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

FDIS	Report on voting
46A/1188A/FDIS	46A/1212/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.

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This second edition cancels and replaces the first edition published in 2005. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

– a new Clause 4 Phase variation with temperature;
– a new Clause 6 Phase stability with bending;
– a new Clause 7 Phase stability with twisting.

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

A list of all parts in the IEC 61196 series, published under the general title *Coaxial communication cables*, can be found on the IEC website.

The committee has decided that the contents of this 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- withdrawn,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.

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

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COAXIAL COMMUNICATION CABLES –

Part 1-111: Electrical test methods – Stability of phase test methods

1 Scope

This part of IEC 61196 applies to coaxial communication cables. It specifies methods for determining the stability of phase of coaxial communication cables.

- phase variation with temperature (Clause 4);
- phase constant variation with temperature (Clause 5);
- phase stability with bending (Clause 6);
- phase stability with twisting (Clause 7).

2 Normative references

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.

IEC 61196-1, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

IEC 61196-1-108:2011, *Coaxial communication cables – Part 1-108: Electrical test methods – Test for characteristic impedance, phase and group delay, electrical length and propagation velocity*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61196-1, as well as the following apply.

3.1
temperature coefficient of phase
$\eta_{t,f}$

coefficient defined at the specified frequency f, as the ratio of the phase difference $\Delta\varphi_{t,f}$ between $\varphi_{25\,°C,f}$ at 25 °C and $\varphi_{t,f}$ at temperature t, and the total phase $\Phi_{25\,°C,f}$ at 25 °C

$$\eta_{t,f} = \frac{\varphi_{25°C,f} - \varphi_{t,f}}{\Phi_{25°C,f}} = \frac{\Delta\varphi_{t,f}}{\Phi_{25°C,f}} \quad (1)$$

where

$\varphi_{t,f}$ is the phase at temperature t and frequency f, in (°);

$\varphi_{25\,°C,f}$ is the phase at 25 °C and frequency f, in (°);

$\Delta\varphi_{t,f}$ is the phase difference between $\varphi_{25\,°C,f}$ and $\varphi_{t,f}$ at frequency f, in (°);

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