SLOVENSKI STANDARD

SIST HD 351.4 S2:2004

01-januar-2004

[Not translated]

Rigid precision coaxial and their associated precision connectors - Part 4: 21 mm rigid precision coaxial line and associated hermaphroditic precision coaxial connector - Characteristic impedance 50 ohm (Type 9/21) - Characteristic impedance 75 ohms (Type 6/21) (IEC 60457-4:1978)

Präzisionsrohrleitungen und zugehörige Präzisionssteckverbinder - Teil 4: 21 mm Präzisionsrohrleitungen und zugehöriger Zwittersteckverbindung - Wellenwiderstand 50 Ohm (Typ 9/21) Wellenwiderstand 75 Ohm (Typ 6/21) (IEC 60457-4:1978)

Lignes coaxiales rigides de précision et leurs connecteurs de précision associés - Partie 4: Ligne coaxiale rigide de précision de 21 mm et connecteurs coaxial de précision hermaphrodite associé - Impédance caractérisitique 50 ohm (type 9/21) - Impédance caractéristique (75 ohms) (type 6/21) (CEI 60457-4:1978)

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CENELEC
GENERAL SECRETARIAT
Rue Bréderode 2, Bte 5 - 1000 BRUXELLES
Tel. 02 - 511 79 32 - Telex 26257 Cenlec b

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ENGLISH VERSION

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RIGID PRECISION COAXIAL LINES AND THEIR ASSOCIATED PRECISION CONNECTORS
PART 4: 21 mm RIGID PRECISION COAXIAL LINE AND ASSOCIATED HERMAPRODITIC PRECISION COAXIAL CONNECTOR CHARACTERISTIC IMPEDANCE 50 OHMS (TYPE 9/21) CHARACTERISITC IMPEDANCE 75 OHMS (TYPE 6/21)

Lignes coaxiales rigides de précision et leurs connecteurs de précision associés. Quatrième partie: Ligne coaxiale rigide de précision de 21 mm et connecteur coaxial de précision hermaphrodite associé. Impédance caractéristique 50 ohms (Type 9/21) - Impédance caractéristique 75 ohms (Type 6/21)

Präzisionsrohrleitungen und zugehörige Präzisionsstecker Teil 4: 21 mm Präzisionsrohrleitung mit zugehöriger Zwitter-Steckverbindung. Wellenwiderstand 50 Ohm (Typ 9/21) - Wellenwiderstand 75 Ohm (Typ 6/21)

BODY OF HD

The Harmonization Document consists of:

- IEC 457-4 (1978) Edition 2, IEC/SC 46D, not appended

This Harmonization Document was approved by CENELEC on **21 January 1980.**

The English and French versions of this HD are provided by the text of the IEC publication and the German version is the official translation of the IEC text.

According to the CENELEC Internal Regulations the CENELEC member National Committees are bound:

to announce the existence of this Harmonization Document at national level

by or before -

to publish their new harmonized national standard

by or before **1981-04-01**

to withdraw all conflicting national standards

by or before **1981-04-01.**

Harmonized national standards are listed on the HD information sheet, which is available from the CENELEC National Committees or from the CENELEC General Secretariat.

The CENELEC National Committees are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60457-4

Deuxième édition
Second edition
1978-01

Lignes coaxiales rigides de précision et leurs connecteurs de précision associés

Quatrième partie:

Ligne coaxiale rigide de précision de 21 mm et connecteur coaxial de précision hermaphrodite associé – Impédance caractéristique 50 ohms (type 9/21) – Impédance caractéristique 75 ohms (type 6/21)

Rigid precision coaxial lines and their associated precision connectors

Part 4:

21 mm rigid precision coaxial line and associated hermaphroditic precision coaxial connector – Characteristic impedance 50 ohms (Type 9/21) – Characteristic impedance 75 ohms /Type 6/21)

International Electrotechnical Commission 3, rue de Varembé Geneva, Switzerland
Telefax: +41 22 919 0300 e-mail: inmail@iec.ch IEC web site http: //www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Part 4: 21 mm rigid precision coaxial line and associated hermaphroditic precision coaxial connector

Characteristic impedance 50 ohms (Type 9/21) — Characteristic impedance 75 ohms (Type 6/21)

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

4) The IEC has not laid down any procedure concerning marking as an indication of approval and has no responsibility when an item of equipment is declared to comply with one of its recommendations.

PREFACE

This standard has been prepared by Sub-Committee 46D, Connectors for Radio Frequency Cables, of IEC Technical Committee No. 46, Cables, Wires and Waveguides for Telecommunication Equipment.

It contains Part 4: 21 mm Rigid Precision Coaxial Line and Associated Hermaphroditic Precision Coaxial Connector, Characteristic Impedances 50 Ω (Type 9/21) and 75 Ω (Type 6/21), of the complete standard on rigid precision coaxial lines and their associated precision connectors, and it is intended to be used in conjunction with Part 1, General Requirements and Measuring Methods.

The second edition resulted from the addition to the first edition, which was restricted to a connector with characteristic impedance of 50 Ω, of a connector of the same general design but with characteristic impedance of 75 Ω.

The first draft for the 75 Ω version was discussed at the meeting held in Bucharest in 1974. As a result of this meeting, a draft, Document 46D(Central Office)30, was submitted to the National Committees for approval under the Six Months' Rule in June 1975.

The following countries voted explicitly in favour of publication:

Austria	Poland
Belgium	Romania
Canada	Spain
Denmark	Sweden
France	Switzerland
Germany	Turkey
Israel	United Kingdom
Italy	United States of America
Japan	

At a last discussion at the meeting held in Stockholm in 1976, the proposal was approved to combine the 50 Ω and the 75 Ω versions of the connector in a second edition of Publication 457-4.

Other IEC publications quoted in this standard:

Publications Nos. 68-1: Basic Environmental Testing Procedures, Part 1: General.

457-1: Rigid Precision Coaxial Lines and Their Associated Precision Connectors, Part 1: General Requirements and Measuring Methods.

RIGID PRECISION COAXIAL LINES AND THEIR ASSOCIATED PRECISION CONNECTORS

Part 4: 21 mm rigid precision coaxial line and associated hermaphroditic precision coaxial connector

Characteristic impedance 50 ohms (Type 9/21) — Characteristic impedance 75 ohms (Type 6/21)

Clause and sub-clause of IEC Publication 457-1	Item
3.1.7.2	*Maximum frequency* The maximum frequency at which the reflection factor and attenuation are measured is: — for 50 Ω: 6 GHz; — for 75 Ω: 4.5 GHz.
3.1.15	*Electrical length* The electrical length, expressed in millimetres, of a connector pair shall be specified by the manufacturer. The inaccuracy of the measurement shall be not more than 0.05 mm (0.002 in).
4.	**Type designation (provisional)** Connectors, conforming to this standard, shall be designated by: *a)* the reference to this standard: 457-4 IEC; *b)* the characteristic impedance. *Example:* 457-4 IEC-50 denotes a hermaphroditic precision coaxial connector with 21 mm nominal diameter, characteristic impedance 50 Ω.
5.	**Standard atmospheric conditions for testing** *Operating* The performance of the assemblies shall comply with the specified electrical requirements over the range of environmental conditions specified in IEC Publication 68-1, Basic Environmental Testing Procedures, Part 1: General, Sub-clause 5.3.
	Environmental requirements
22.	*Dry heat*
23.	*Cold* *Non-operating* The performance of the assemblies shall remain within the electrical and mechanical specifications when tested under normal operating conditions, after having been exposed to the environmental conditions specified in IEC Publication 457-1, Rigid Precision Coaxial Lines and their Associated Precision Connectors, Part 1: General Requirements and Measuring Methods, Section Four. The following severities apply: Test A: −55 °C; Test B: +70 °C.

Clause and sub-clause of IEC Publication 457-1	Item
8.	**Dimensions** The inch dimensions are derived from the original millimetre dimensions. The nominal inside diameter of the outer conductor shall be 21 mm (0.826 77 in). Maximum deviations on the inner and outer diameters shall limit the uncertainty in the characteristic impedance: for 50 Ω to 0.05% or less, for 75 Ω to 0.15% or less; with a maximum deviation on the inside diameter of the outer conductor: for 50 Ω of ± 0.004 mm (±0.000 16 in); for 75 Ω of ± 0.008 mm (±0.000 31 in). The nominal outside diameter of the centre conductor shall be: for 50 Ω 9.119 mm (0.359 02 in); for 75 Ω 6.009 mm (0.236 58 in). When dimensions are verified according to IEC Publication 457-1, Clauses 5 and 14 shall apply. For the critical dimensions of the mating faces, coupling attachment or coupling means, refer to Figure 1, page 12.
10.1	*Centre contact force of mated hermaphroditic connectors* When two connectors are mated, the axial force exerted by the contact mechanism on the centre conductor of a connector shall be: 15 N min., 25 N max. When a force of 45 N for 50 Ω and 33 N for 75 Ω is applied for at least 12 h, the centre conductor of a connector shall be displaced axially less than: 0.03 mm (0.0012 in) for 50 Ω; 0.06 mm (0.0024 in) for 75 Ω.
11.	**Bending moment on outer conductor** The bending moment of 6 $^{+0}_{-1}$ Nm shall be applied. All measurements on mated pairs shall be carried out after the coupling nut has been tightened with a maximum or minimum torque as specified for the measurement and given in the relevant figure.
12.	**Centre contact deflection** The angular deflection resulting from the application of a perpendicular force of 5 N for at least 12 h shall be less than 0.5° at the front end of the connector. The force shall be applied to the front end of the centre conductor in such a way that damage to the contact mechanism is avoided.